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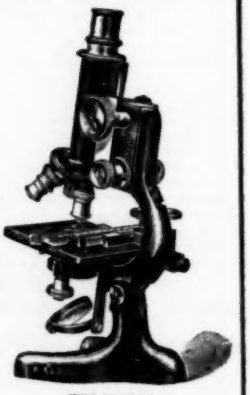

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Some Clinical Aspects OF SIMPLE GOITRE, WITH REMARKS ON ITS CAUSATION.

Being the Hunterian Lecture delivered before the Hunterian Society on Jan. 25th

BY SIR JAMES BERRY, B.S. LOND., F.R.C.S. ENG.,
CONSULTING SURGEON TO THE ROYAL FREE HOSPITAL.

IN the days of the great John Hunter the thyroid gland had but little interest for surgeons. It was thought to be an organ of little or no importance, its diseases were ill-understood, and surgical interference with it was hardly ever demanded. Hunter himself, I believe, never wrote anything about it. But one can easily imagine with what zeal and enthusiasm Hunter, had he practised in Switzerland at the present day, would have thrown himself into the fascinating study of the thyroid and its diseases. Their operative treatment, which modern methods alone have rendered feasible, would have been, I am sure, of special interest to him.

I do not propose, however, to speak to you of the operative surgery of the thyroid; I have already written and said much on various occasions upon this subject. But I desire to discuss some of the clinical aspects of that most common of all diseases of the thyroid—namely, simple or endemic goitre—and to deal also with its pathology and causation.

VARIETIES OF GOITRE.

If we leave aside malignant disease, acute inflammation, and certain of the rare forms of thyroid enlargement, we are left with two main varieties of goitre. The first is characterised by excess of the cellular elements of the gland and by diminution or absence of colloid. This is exophthalmic goitre in its various forms. It appears to be essentially a hypertrophy of the gland, although this is probably not the whole explanation of the condition. Of this form of goitre I propose to say but little in this lecture. I have written about it before, and the main symptoms of the condition are well known.

The second variety is that of simple or endemic goitre, and the first point that I want to emphasise is that *simple endemic goitre is not a hypertrophy of the gland. It is essentially a degeneration.* The enlargement of the gland in the earliest stages in which I have been able to observe it consists primarily in a distension of the organ with colloid, with *atrophy* of the epithelial elements. In this respect it differs entirely from the goitre of Graves's disease, in which, as mentioned above, the enlargement is due to an increase in the cellular elements of the gland. This misuse of the term hypertrophy as applied to simple goitre is very widely spread in literature at the present day. It is especially found in the writings of experimental laboratory researches and in those of physicians, who presumably have fewer opportunities of seing the inside of a goitre than have surgeons who operate upon them.

If the cause that produced the increase of colloid, almost certainly an irritant of some kind, be removed, the gland quickly returns to the normal. We see this frequently in practice. But if the cause persists, a fibrosis due to slight chronic inflammation sets in and the condition gradually becomes a permanent one. In goitres of considerable size or long duration this interstitial fibrosis may be most marked, and it is frequently accompanied by calcification. The retention of the colloid leads to the presence of small cysts which may coalesce into large ones. But nearly all the larger cysts of a goitre are formed by the breaking down of so-called adenomata. These "adenomata" are masses of ill-formed thyroid tissue, surrounded by a more or less well-marked capsule. On account of their encapsulation they play an important part in the operative treatment of goitre. The term "adenoma" is not a very correct one, but it is convenient for practical purposes. The same may be said of the term parenchymatous, which most surgeons, including myself, are in the habit of employing loosely for the general enlargement of the whole gland, as distinguished from local enlargement caused by adenomata.

Differential Diagnosis.

It will thus be seen that the pathological picture of the two diseases, exophthalmic and simple goitre, is widely different. Similarly, their clinical features in typical cases are markedly dissimilar. Difficulties of diagnosis, however, arise occasionally in the early stages of both, as well as in those mixed cases which present some of the characteristic symptoms of both forms. For instance, the characteristic symptoms of exophthalmic goitre may supervene upon a pre-existing simple goitre. To this the term of "Basedowified" goitre is often applied, especially by continental and American writers. Similarly there are cases of simple goitre, especially of the adenomatous or cystic forms, which may show symptoms that are usually characteristic of the exophthalmic form—such as tremor. As long ago as 1907 [1] I pointed out the existence of a group of thyroid cases which, then as now, I usually treat by operation. These display tremulousness, palpitation and some of the other symptoms of Graves's disease, but never exophthalmos. They are not cases of genuine exophthalmic goitre. Most of them are cases of more or less encapsuled tumours, cystic or solid. So far as my observations go, it is a goitre lying deeply behind the sternum which presents most often these misleading symptoms, and which is apt to be confused with true exophthalmic goitre. From an operative point of view they present few or none of the special risks attendant upon operation in cases of Graves's disease.

Many surgeons call them cases of hyperthyroidism, but I doubt whether this is really a correct term. In some the tumour is nothing but a cyst with a thick, fibrous wall or a solid mass of almost inert tissue, which can have little or no secreting action, and is certainly not a cause of hyperactivity. Some surgeons boldly include these cases in their statistics of exophthalmic goitre merely on the ground of persistent tachycardia, but I think this is quite wrong. Their inclusion leads to confusion and tends to impart an unduly rosy hue to statistics of operations. Certainly many such cases which really belong to the simple variety come to me with a ready-made diagnosis of hyperthyroidism or Graves's disease. It is important also to bear in mind that the not uncommon occurrence of a sudden hæmorrhage into a soft encapsuled adenoma may also produce a good deal of temporary tachycardia and irregularity of pulse, which produces a superficial resemblance to exophthalmic goitre. Acute catarrhal conditions may also sometimes have the same effect.

It should never be forgotten that a simple goitre may be accompanied by tachycardia which is not due to the goitre at all. I have seen numerous cases of this kind in which the tachycardia was due to an unsuspected lesion in the appendix, gall-bladder, uterus, or kidney. There appears to be but little doubt that septic foci in distant parts of the body may lead to a hyperplasia of the thyroid, but without colloid distension, and may be accompanied by tachycardia. Experiments on animals seem to confirm this view. It is noteworthy that all the forms of thyroid enlargement which were produced in animals by my friend Colonel R. McCarrison by food contaminated with fæcal matter appear to have been of the hyperplastic form only. He tells me that it was only when he added an excess of lime to the food that he succeeded in obtaining colloid distension of the vesicles.

[1] Proceedings of the Royal Society of Medicine, Section of Surgery, Nov. 12th, 1907, pp. 36, 37.

The *differential diagnosis* between early cases of simple goitre and Graves's disease, before any exophthalmos has set in, is often difficult. Points which assist are: in Graves's disease, excitability of the patient, aspect of the face, and a preference for cold weather rather than hot; while placidity and a dislike of cold are more characteristic of a patient suffering from simple goitre. A slightly subnormal temperature, which is raised to normal by small doses of thyroid extract, shows hypothyroidism, and confirms the diagnosis of simple goitre.

In concluding this part of my subject I may say that it seems to me evident that, as far as simple goitre is concerned, we are dealing not with hypertrophy or hyperplasia of the thyroid, *but with a condition that is essentially a degeneration.* This view is in direct opposition to that which seems to be adopted by most of those who perform experiments on animals without having had much opportunity of investigating the pathological conditions of the disease as it occurs in man.

[A series of pathological specimens and photographs was here shown to illustrate the gradual transition from the early colloid goitre, with but slight fibrosis, through mixed forms with adenomatous nodules, up to the later, completely degenerated fibrous or cystic forms, often with much calcification.]

ENDEMIC GOITRE.

I now come to the next part of my subject—namely, endemic goitre. It may be asked why should a general surgeon like myself, who has practised all his life in London, venture to express any opinion on the conditions and causation of endemic goitre. I will explain. It is just 40 years ago since I first began to take an interest in goitre, when as a very young man I was working for the Jacksonian prize of the Royal College of Surgeons. After various investigations into the anatomy and pathology of the thyroid I spent many weeks wandering about different parts of Switzerland with note-book and camera in hand, talking to Swiss surgeons and country doctors, interviewing the subjects of goitre in Swiss villages, and examining pathological specimens in Swiss museums. Since that time during 35 years I have rarely passed a year without wandering for some weeks about Europe, usually on foot or bicycle. I have visited nearly every European country, most of them repeatedly, and wherever I went I kept my eyes open for goitre. Moreover, in the pursuit of geological studies and from love of climbing, I have often been on the higher Alpine glaciers both of Switzerland and Tyrol, on the rocky summits of the Pyrenees and the Carpathians, and amid the snowfields of Norway. In this country I may also claim that there is no county that I have not visited, and from which I have not obtained some information connected with the occurrence of goitre. I have at least enjoyed unusual opportunities for learning where goitre is common and, what is equally important for our purpose, where it does *not* occur.

Causation.

This leads me to a consideration of the difficult and much-discussed problem of the causation of endemic goitre. It is needless for me to mention the numerous theories that have from time to time been put forward on this subject. They are to be found in most text-books. One of the most complete modern summaries is that of Crotti in his excellent book on goitre.

But I must say a few words about a theory that has attracted a good deal of attention lately. This is the theory that a "lack of iodine" either in food or water (or even in the air!) is the essential cause of goitre. An immense amount has been written about this both by those who know something about goitre and by those who, from their own personal observation, know little or nothing, but who copy the remarks that have been made by others. This theory, the most fashionable one at the present day, and to my mind one of the wildest, is a revival of an old view, put forward at least 75 years ago, based upon the fact that iodine is a well-known remedy for some forms of goitre. This modern revival, which comes from America, seems to depend upon chemical investigations of normal thyroids and of the enlarged thyroids of goitre. It is asserted that a goitre contains less iodine than a normal gland. This may well be the case, but in itself does not prove anything as to the causation of goitre. It is quite possible that a certain intake of iodine may be necessary for health. There is also no doubt that in some diseased conditions of the thyroid gland iodine treatment is beneficial. But to deduce from this that absence of iodine is the main, if not the only, cause of endemic goitre is, to my mind, wholly unjustifiable and totally opposed to observed facts as to the distribution of the disease. I should not have thought it worth while to devote any time to this theory were it not that it has been widely accepted in this country, not only in medical circles but also by the lay press.

In the latest (1925) edition of so excellent a book as Taylor's "Practice of Medicine" we actually read: "It has been conclusively demonstrated that endemic goitre results from lack of iodine and tends to occur among people who live far away from the sea." The writer of this statement, like many others who maintain this theory, seems to have overlooked such facts as that goitre is far more common in the Maritime Alps of France, which are close to the Mediterranean, than in many places in the centre of that country far away from the sea. Moreover, it is by no means unknown close to the sea in South Wales and parts of the Italian Riviera, as well as in many other places on the sea-coast, as I can testify from my own observations. If this part of the theory were true we should expect to find the endemicity of goitre increasing steadily as we went inland. This is certainly not the case. As far as the other part of the theory is concerned, no one has ever shown that iodine is less common in notoriously goitre-producing waters than in waters that do not produce it.

The most convincing single proof of the baselessness of the "lack of iodine" theory is afforded by what occurred in connexion with goitre at Sanawar in North India, investigated by Colonel McCarrison and fully reported by him in the *British Medical Journal* of June 7th, 1924. At a large school in an institution at that place, where a high incidence of goitre had been present for many years, he found in 1913 that over 80 per cent. of the children were affected. By his advice a new and pure water-supply was introduced in 1918. In 1922 "goitre was reported to have disappeared from the school." In the autumn of 1923, when he revisited the school, the incidence of goitre was only "2·2 per cent., or no greater than the incidence of thyroid enlargement among school-children residing in a non-goitrous district such as Delhi." He was assured by the principal that no changes had been made in the food. Samples of the new water-supply were analysed by the chemical examiner to the Punjab Government, who reported that it contained no iodine. Not satisfied with this, Colonel McCarrison "caused 25 gallons of the water to be evaporated to dryness after the addition to it of sodium carbonate. The residue thus obtained was sent to the chemical examiner for estimation of its iodine content. He reported that it contained no iodine." It was clear, therefore, "that the disappearance of goitre was not due to an increased intake of iodine either by way of the new water-supply or of food." Surely this well-attested instance of endemic goitre, ended by the introduction of a water-supply devoid of iodine, should alone be enough to demolish the "lack of iodine" theory altogether.

Geological Considerations Bearing on Endemic Goitre.

I turn now to some geological considerations which are, I think, not without importance in connexion with our subject. I will first of all point out where the great centres of endemic goitre throughout the world are to be found, places where in some parts everybody has goitre to a greater or less extent. [Maps were here shown.] In Europe there is a good

deal in the Pyrenees, and then along the whole length of the Alps, from the Maritime Alps, through Savoy and right along the Swiss and Italian Alps and far into Eastern Austria, gradually decreasing until we come to the great Hungarian plain from which, as far as my observations go, goitre is, in the main, absent. In the northern parts of the Carpathians I have seen but little of it, but in Transylvania there is again a good deal. It must be noticed, however, that it is not so much in the higher regions of all these mountains that goitre is most prevalent, but rather in their lower parts and in the foot hills that slope away from the central axis. In the case of Switzerland, so far as published maps are concerned, and in this respect my own limited observations tend to confirm them, it is in the lower portion of the upper Rhone Valley above Martigny, and in the cantons of Berne, Fribourg, and Aargau, that the disease is most prevalent. Passing on into Asia, although no maps of goitre distribution (so far as I am aware) have been published, I have overwhelming information, both from published and private sources, that goitre is extremely prevalent along the whole length of the Himalayas from Cashmere to Assam and beyond, and on the lower ground sloping away from these mountains, and even sometimes far out into the plains. The Andes, the Cordilleras, and the Rocky Mountains in America, as well as the Alps of New Zealand, are notable centres of endemic goitre. All these mountains are, as every geologist knows, young mountains in the geological sense—i.e., mountains in which active denudation or erosion is taking place. In the composition of practically all of them there is much limestone.

Turning for a moment to other mountains, there are three groups on which goitre is not markedly prevalent. First, the older worn-down mountains, where the process of denudation is usually only slightly active and which are mainly the remnants of vanished higher ranges. An instance of this is seen in the Highlands of Scotland. Secondly, the older crystalline rocks, seen, for example, in Western Norway. Thirdly, mountains composed entirely of volcanic rocks, such as active and extinct volcanoes. It is worthy of note that the two last varieties possess no limestone.

Let us return now to the characteristics of the younger mountain chains already mentioned, in most of which endemic goitre abounds. Most of them are crowned by glaciers, especially in the regions where goitre is most common. No student of geology need be reminded of the constant grinding and denuding action of these slowly moving rivers of ice. Even the casual traveller in Switzerland must have noticed the turbidity of these glacial rivers that bring down into the lakes an immense amount of mineral matter in the form of finely ground-up rocky material in suspension. He can scarcely have failed to notice the discoloration of the water of all the Swiss lakes, varying in hue from a greenish tinge to the beautiful blue of Lake Geneva. This discoloration is due, of course, to the extremely fine sediment suspended in the water. How different from the mechanically pure and therefore clear waters of the lakes of such a mountainous country as the Highlands of Scotland, the geologically old mountains already alluded to. This is possibly, I might say probably, one of the reasons why Glasgow, which gets a pure supply of water from a highland lake, is immune from goitre. A similar state of affairs seems to exist in the Himalayas. Over and over again do we read of the turbidity of the waters descending from these mountains.

But it must not be supposed that I am claiming that glaciers are essential to the production of a goitre-producing water. In Switzerland plenty of the smaller streams and springs do not come directly from glaciers. Many of them come from the great accumulations of glacial debris overlying the central plain of that country, or from the great series of sandstone and limestone that underlie it. On a smaller scale erosion and consequent sedimentary pollution of streams occurs in any hilly country where the rocks are comparatively soft and easily eroded, as in the case of calcareous marls and many others.

The geological structure of the rocks on which goitre occurs is a very difficult subject into which I cannot now enter. It must suffice to say that there is in general a connexion between the distribution of goitre and the water derived from calcareous soils of various kinds. But many errors have arisen from hasty conclusions drawn merely from a comparison between geological maps and those of goitre distribution. It is the water derived from these rocks and not the geological names of the geological formations that we have to take into consideration. England is not a very good country for the study of the geological distribution of goitre, partly for the above reason. Partly also because of the widespread distribution of the disease throughout this country, and the complex geological structure of the land, which has led to the description of the country as the paradise of geologists, since practically no formation is unrepresented. All this makes the study particularly difficult.

To my mind there is abundant evidence that the cause of endemic goitre is to be found in drinking water, and though I fully admit that the actual nature of the poison is not definitely proved, I am inclined to think that in the minute particles of inorganic mineral matter (probably calcareous), suspended in the water, we find, even if not the actual poison, at any rate an essential accompanying factor. When visiting various goitrous districts I have been struck by the frequency with which the disease occurs among people who habitually drink turbid waters, and time after time I have been told the same story—that in certain districts goitre has disappeared or has greatly diminished since the introduction of a new and better water-supply. Undoubtedly much more attention is directed nowadays to the importance of the water-supply in connexion with endemic goitre, but whether the action taken in consequence is always wise is questionable. For instance, the adoption of the "lack of iodine" theory by medical officers of health has led to the practice of adding iodine to public water-supplies both in America and Switzerland and also in this country. Whether this is a good method of administering iodine for the prevention or cure of goitre has led to much controversy both here and abroad. Some advocate the alternative method of giving it in sweets or chocolate to school-children, or adding it to salt. This practice of the indiscriminate administration of iodine, though it may be suitable to places with high endemicity like many parts of Switzerland, is hardly necessary in England.

I may refer to an excellent paper on the subject by Dr. James Wheatley,[2] M.O.H. for Shropshire, who gives the preference to the iodisation of salt, and to another by Sir Alexander Houston,[3] Director of Water Examinations, Metropolitan Water Board. It is to be regretted that both these writers appear to accept fully the lack of iodine theory. There is at least some evidence that iodine poisoning may occur from the indiscriminate administration of iodine.

CONCLUSIONS.

In conclusion I will sum up the points upon which I have tried to lay stress, as follows:—

1. Simple endemic goitre is not a hypertrophy but essentially a degeneration of the thyroid gland. The gland is not over-active, but under-active.

2. Whatever may be the connexion between iodine and the thyroid gland, there is no reason for believing that a lack of iodine has anything to do with the causation of endemic goitre, as found in the human subject.

3. It is quite certain that, at least in the vast majority of cases, the disease is produced through the agency of drinking water.

4. There is much evidence that practically all waters which produce goitre contain frequently,

[2] Journal of the Royal Sanitary Institute, 1925, xlvi., No. 7.
[3] The Medical Officer, Jan. 24th, 1925, p. 41.

although not necessarily at all times and seasons, mineral matter in suspension, usually in an extremely fine state of subdivision.

5. There is also a good deal of evidence that this mineral matter is generally of a calcareous nature.

6. Organic matter in suspension, although capable apparently of causing a hyperplasia of the gland, at least in animals, has not been proved to be the cause of endemic goitre as seen in man.

NEW FACTS CONCERNING THE FAT-SOLUBLE VITAMINS.

Delivered at a Meeting of the Section of Comparative Medicine of the Royal Society of Medicine on Jan. 27th, 1926,

BY J. C. DRUMMOND, D.Sc., F.I.C.,
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CONSIDERABLE progress in the study of the fat-soluble vitamins has been made since McCollum and Osborn and Mendel in 1913 first observed the marked influence on growth which certain animal fats exhibit in contrast to the inactivity of the majority of vegetable oils.

For a number of years it was considered that this physiological action of animal fats was due to the presence of a substance to which the name "fat-soluble A" was given. It was demonstrated quite clearly by extensive experiments in America and Great Britain that this substance, whatever its nature, is essential for the growth and well-being of young animals, but it was not until E. Mellanby carried out his well-known researches on the causation of rickets that the influence of certain foodstuffs in facilitating the deposition of lime in developing bone was traced to a dietary factor of the same type.

The Ætiology of Rickets.

It will be remembered that at the time Mellanby published his researches there were two conflicting schools of thought regarding the ætiology of rickets. On the one hand a considerable number of authorities regarded the disease as being primarily due to defective hygienic surroundings, in particular lack of sunshine and exercise, whilst on the other certain observers were inclined to regard it as due to defective diet. The experiments of Mellanby made it clear that rickets can be produced at will in experimental animals by depriving them of a dietary constituent similar as regards its distribution in natural foodstuffs and its general properties to the vitamin that had been discovered by the American investigators in 1913.

Mellanby was careful not to assume the identity of the two factors, and for a period there was some confusion in the minds of scientists as to whether the growth-promoting and antirachitic properties of a foodstuff such as cod-liver oil were due to one or more than one factor.

We owe it to the researches of McCollum at Johns Hopkins University, Baltimore, that a clear differentiation between the substances responsible for these two effects was made. McCollum demonstrated that the rate of destruction of the growth-promoting and antirachitic potency of cod-liver oil were destroyed at very different rates by subjecting the oil to oxidation. Furthermore, he ascertained that certain natural foodstuffs may show powerful activity in preventing rickets without any marked effect on growth or vice versa. It appeared very probable, therefore, that at least two substances of the fat-soluble vitamin type occur in cod-liver oil, and for purposes of classification these are to-day termed vitamin A and vitamin D, the former term being applied to the substance more particularly affecting growth, and the latter referring to the factor playing a part in the deposition of lime in bones.

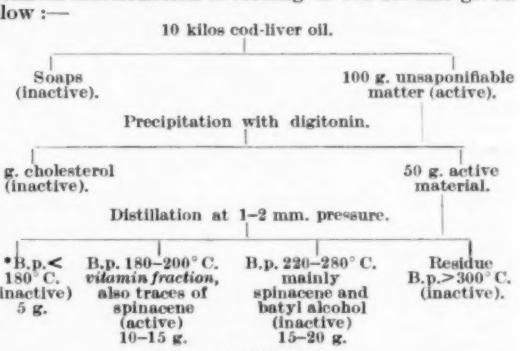
A New Fat-soluble Vitamin.

Before passing on to consider in detail recent investigations regarding these two interesting subjects, I should like to draw attention to the important researches by Prof. H. E. Evans, of California, which have proved the existence of a third vitamin of the fat-soluble class playing an extremely important part in reproduction. As yet information concerning the chemical nature of this substance is meagre, but in my laboratory we have satisfied ourselves that the factor discovered by Evans is distinct from either vitamin A or D, and we have confirmed his main conclusions regarding its action. This newly discovered factor is now termed vitamin E. It is, I think, a most interesting fact that the attention of both biochemists and physiologists is at the present time being turned away from the true fats themselves, and is being directed to the examination of the small traces of substances which usually accompany the glycerides as they occur naturally.

It will be remembered that the majority of natural oils and fats, such as cod-liver oil, consist of about 99 per cent. true fats—i.e., glycerides—and some 1 per cent. substances which resist the action of potash when fats are broken down into glycerol and soap in the ordinary saponification process. This 1 per cent. is termed the unsaponifiable matter. In the past this fraction has attracted very little notice, and interest has centred entirely round the digestibility and nutritive value of the large proportion of true fats present in the oil. The discovery that the unsaponifiable fraction, if prepared with care so as to prevent secondary changes, in particular oxidation, occurring, contains the whole of the vitamins present in the original oil has, as I say, diverted attention to the examination of this fraction.

The Nature of Vitamin A.

I will first bring to your notice some few details of our own attempts to isolate and to determine the nature of the vitamin A, which appears to be largely responsible for the beneficial influence which cod-liver oil has on growth. The unsaponifiable matter prepared from cod-liver oil has been submitted to chemical fractionation according to the scheme given below:—



• B.p. = boiling point.

From this table it will be observed that we have succeeded in separating the active substance from a number of other constituents of unsaponifiable matter, but I regret to say we have not yet achieved the separation of the vitamin A in what can be considered to be the pure condition.

Some of you will recall a statement in the lay press a few weeks ago that the Japanese investigator, Takahashi, had succeeded in isolating vitamin A as a pure compound. We have critically examined his work and have satisfied ourselves that his preparations are not more pure than those which we have obtained. It may be of interest to discuss the rather extraordinary potency of the preparations which have been obtained by this fractionation.

The experimental animals employed in these investigations are usually rats. A rat of 100 g. body-

weight will consume during the day approximately 15 g. dry weight of food. If this food be deficient in vitamin A the animal will completely fail to grow, and in due course will decline in weight and die. In order to keep the rat alive, to maintain health, and to permit a normal rate of growth it is only necessary, as we have found, to supplement his deficient diet with an amount of active fraction weighing 1/200th mg. You will, I think, agree with me that this dosage is of so small an order as to recall the effective doses of internal secretions and of certain drugs.

I fear I cannot give any clear idea, as yet, of the chemical nature of vitamin A, but the very highly active fractions we have obtained largely consist of unsaturated higher alcohols, containing in their molecules only the elements carbon, hydrogen, and oxygen. It is possible that the vitamin is actually one of these alcohols, but until we have prepared it in undeniably pure condition it would be unwise to draw such a conclusion. It will be agreed, at any rate, that we must abandon all ideas of the vitamin being a labile, ill-defined compound, as we at one time imagined, when it is so readily demonstrated that it can survive such drastic chemical treatment as saponification with boiling alkalies and distillation at temperatures over 200° C.

I will not say more about vitamin A beyond mentioning that Dr. O. Rosenheim and I have recently described a simple colour reaction that we believe is caused by it and which is proving of great use in detecting the presence of the active substance. I must now pass on to give a brief review of

Recent Knowledge concerning Vitamin D.

As pointed out above, McCollum's work clearly differentiated vitamin A from vitamin D, but this advance did not at once help to reconcile the two conflicting schools of thought regarding the causation of rickets. The reconciliation seems to-day to have been accomplished, and the story of its achievement is one of the most fascinating which recent scientific progress has presented.

In 1919 Huldschinsky observed that children suffering from rickets were rapidly cured on exposure to sunlight, or to the light of lamps which emit rays in the ultra-violet part of the spectrum. This striking observation soon received general confirmation, and some glimpse was then obtained of the line upon which one might correlate the views of the two opposing groups of scientists. But, welcome as some prospect of clearing up this difficult matter was, there still remained the task of determining why rickets could be cured equally well by exposing the patient to ultra-violet light or by administering a substance such as cod-liver oil.

The first clue that led to a solution of this problem was provided by the careful work of the American investigator Steenbock, who discovered the remarkable fact that a food mixture which, by reason of its deficiency will give rise to rickets in animals, becomes endowed with antirachitic potency after it has been exposed to ultra-violet light. Two possibilities suggested themselves to account for this. On the one hand, it was possible that the treated fats absorbed ultra-violet rays, and that the energy so absorbed was later emitted in the form of secondary radiations, which effected a curative action similar in character to that produced by direct exposure to the primary radiations. On the other hand—and it seemed a more attractive hypothesis—it was possible that the absorption of the short wave-length radiation actually produced in the foodstuffs a substance of the type of antirachitic vitamin D. It was comparatively an easy matter to examine one by one the constituents of the food mixture, and this examination soon revealed that the precursor of the physiologically active substance is present in the oil or fats. The examination of such activated fats revealed that the conference of antirachitic potency could be traced to the action of ultra-violet light on a constituent or constituents of the unsaponifiable fraction. One of the most commonly occurring substances in these unsaponifiable oils and fats is the familiar substance cholesterol—a substance of almost universal distribution in living cells.

Dr. Rosenheim and Mr. T. A. Webster and I were able to show, simultaneously with Steenbock and Hess in the United States, that cholesterol, or the very closely related compound, phytosterol, is the parent substance of the antirachitic vitamin. It is possible to take the purest specimens of cholesterol—and it is a substance which can be prepared in a state of considerable purity—to expose it to ultra-violet light for an hour or two under suitable conditions, and to obtain thereby a product showing an extremely powerful antirachitic action. This activated cholesterol, if we may so term it, shows little or no effect on growth, nor does it show other properties of vitamin A, so that it may now be definitely accepted that these two substances A and D are distinct.

As yet the chemical investigation of the substance produced from cholesterol by the action of ultra-violet light has not revealed the chemical nature of the active substance. It should, however, prove possible to obtain a fairly large amount of this material, to fractionate by some such process as I have already described, and then to obtain the antirachitic substance in a pure state and ascertain its nature and properties.

I have presented these questions very much from the biochemical aspect. I have done this because I am in my own researches primarily concerned with the biochemical problem of determining the chemical nature of these remarkable substances and ascertaining their physiological action, and I shall be satisfied if I have made clear the following points.

In the first place, there can be no question, I think, that there has been satisfactory differentiation between these two fat-soluble vitamins A and D and that both of them appear to be physiologically efficient in amounts so minute compared with the quantities of ordinary foodstuffs that are required by the body that in looking for parallels one can only call to mind the action of agents such as the secretion of the thyroid gland or of certain drugs. In the second place, I rather hope that I have dissipated from the minds of any who still retain it the old and erroneous idea that the vitamins are hypothetical substances, or that, if they exist, they are substances of ill-defined character comparable with the enzymes or the toxins.

TUBERCLE BACILLI IN FÆCES.

A NOTE ON THE EXAMINATION OF THE FÆCES OF 225 TUBERCULOUS CHILDREN.*

BY KATHLEEN A. H. SYKES, M.D. LOND.

THAT many patients swallow a large proportion of their sputum has long been recognised. This is especially true of women and children, but, owing to the frequent difficulty of diagnosis in children, the importance of obtaining definite evidence of tuberculosis, either by examination of the sputum if it can be obtained, or by other methods if it cannot, is obvious, and hence any method which will help to this end is of value. The results which have been obtained by examination of the fæces for tubercle bacilli in this series of cases are such as to show that this method is of importance, and should be more widely known and practised.

A number of workers have endeavoured to examine swallowed sputum as it is at length excreted mixed with fæcal matter in adults, but Inman,[1] in 1910, first applied this method to children. He examined the stools of seven children under 10 years of age, and found tubercle bacilli in one case from which no sputum could be obtained. He remarked that "the method suggests itself as particularly useful in the investigation of children," but added "these

* Being an abstract of a thesis accepted for the degree of M.D. Lond., and published with the consent of the authorities of London University.

results are too few to admit any conclusions being drawn from them." Emerson,[2] in 1913, wrote that "the diagnosis of pulmonary tuberculosis has been made in this way—i.e., by finding tubercle bacilli in the fæces—especially in children." Chandler and Stobo[3] in a recent paper emphasise the value of this method of examination, but only five children are included in their short series of cases.

For the purpose of this investigation over a period of 12 months (July, 1923–July, 1924) all cases admitted under the writer's care either for observation for suspected pulmonary tuberculosis, or with a diagnosis definitely implicating the lung, have had their fæces examined for tubercle bacilli as a routine. In addition, and as controls, a number of cases of tuberculous peritonitis, cervical adenitis, and children not suffering from tuberculous disease have also been investigated. In all a total of 225 cases have been examined, the ages of the children varying from 2 to 16 years.

Technique.

The methods that have been employed are:—

(*a*) Examination of direct smears from the surface of constipated stools.

(*b*) Concentration methods.

1. Examination of the deposit after a small piece of fæces has been thoroughly mixed with normal saline and then centrifuged.

2. Examination of the deposit both with and without centrifugation after a portion of fæces has been treated for two hours with antiformin.

3. Examination by ligroin method. This method is carried out as follows: A piece of fæces the size of a walnut is ground up in a mortar with sufficient saturated solution of sodium chloride to produce an emulsion of the consistency of cream. To this emulsion 2 c.cm. of a mixture of 1 part of ligroin and 2 parts of acetic ether are added and the whole intimately mixed, then filtered through three layers of sterile gauze into a clean test-tube and allowed to stand for 20 minutes. With a sterile pipette a few drops of the layer immediately beneath the ligroin acetic ether layer are withdrawn, expressed on to a slide, spread and fixed by heat. This method is a modification of that first used by Lange and Nitsche.[4]

Staining of Slides.—The slides were stained with warm carbol-fuchsin solution for eight minutes, washed, decolorised in 25 per cent. sulphuric acid solution for one hour, washed, and then decolorised in absolute alcohol for 15 minutes, after which they were washed and counterstained with methylene-blue.

The direct method (*a*) has been found unreliable when tubercle bacilli are scanty. The antiformin method, though reliable, is protracted. The ligroin method has been found reliable and convenient, and is recommended. No slide has been pronounced positive until at least three typical tubercle bacilli have been seen, and in doubtful or negative cases a search for at least 20 minutes has invariably been made.

Evidence as to the Bacilli found in Fæces being Tubercle Bacilli.

At one time there was a widespread belief that human fæces contain non-pathogenic acid-fast bacilli. Fried[5] says "that this belief has no foundation," and Alexander,[6] as a result of his investigation states that "the inference follows that all acid-fast bacilli in the fæces are tubercle bacilli."

From the present research it would appear that the acid-fast bacilli found were tubercle bacilli for the following reasons:—

1. No other common bacillus will retain the carbol-fuchsin stain after one hour in 25 per cent. sulphuric acid followed by 15 minutes in absolute alcohol. The *B. lepræ* and the bacillus of Johnes' disease in cattle are stated to share this property, but they may be discounted in connexion with the cases here investigated.

2. *Animal Inoculation.*—Dr. S. Roodhouse Gloyne, pathologist at Victoria Park Hospital, very kindly carried out this special examination for me, and I take this opportunity of expressing my indebtedness to him.

Small portions of fæces from three patients in whom the fæces showed acid-fast bacilli but from whom no sputum could be obtained were forwarded to Dr. Gloyne, who inoculated guinea-pigs with them. In one case the guinea-pig died five weeks later from tuberculosis. In the second case the guinea-pig remained healthy, and on examination six weeks after inoculation showed no tuberculous lesions, but the patient subsequently coughed up sputum which contained tubercle bacilli, so the presumption is that the acid-fast bacilli found were tubercle bacilli, and that either the portion of fæces inoculated was free from these bacilli, or that they failed to infect the guinea-pig owing to some other reason. In the third case four guinea-pigs were inoculated on two separate occasions, but died of *B. coli* infection within 48 hours, so that a sufficient period did not elapse in which tuberculosis could develop.

3. All cases whose sputum contained tubercle bacilli showed acid-fast bacilli in the fæces, and no case in which the sputum was negative for tubercle bacilli on repeated examination ever showed acid-fast bacilli in the stools.

4. *Food.*—It has been suggested that acid-fast bacilli in fæces may be derived from certain foods, particularly milk and butter. The diet of this series of cases included milk, margarine, and, in some cases, butter, but in no case of tuberculous peritonitis, adenitis, or patients not clinically tuberculous (controls) who were taking a similar diet were acid-fast bacilli found in the fæces.

5. *Post-mortem Evidence.*—Two patients who never coughed up any sputum, but whose fæces showed acid-fast bacilli, came to post-mortem examination. Both cases showed typical tuberculous lesions of the lung, and in one case smears from the tuberculous lung showed tubercle bacilli. A smear was not taken from the lung in the second case.

6. *Subsequent Evidence from Sputum.* — Three patients whose fæces gave a positive result, but from whom no sputum had been obtained up to the time of this examination, subsequently coughed up sputum containing tubercle bacilli.

Further confirmatory though less substantial evidence is obtained from a study of certain of the cases. Thus in 25 patients from whom no sputum could be obtained, but whose fæces showed acid-fast bacilli, the signs and symptoms of pulmonary tuberculosis were sufficient to warrant this diagnosis. As is shown later, the subsequent course of such cases is very similar to that of those whose sputum contained tubercle bacilli.

Evidence as to the Source of the Acid-fast Bacilli being Tuberculous Areas in the Lungs.

Rittel-Wilenko[7] holds that ulceration of the intestines is almost always found where acid-fast bacilli have been discovered in the fæces. Twenty-eight of the 54 cases she investigated came to autopsy, but it has been pointed out by other writers[8] that in such advanced cases 71–81 per cent. show intestinal ulceration whether acid-fast bacilli have been found or not, so that the evidence she submits is not convincing. Other writers[9] consider that "the occurrence of tubercle bacilli in the fæces is independent of an intestinal lesion"; while Fried thought that such an occurrence might have a double origin either from the discharges from an intestinal ulcer or from swallowed sputum.

That intestinal ulceration is not necessarily the source of such bacilli is shown by the case of M. K., who had moderately extensive disease of the lungs, but no sputum could be obtained from her. Her fæces contained acid-fast bacilli. Three weeks after examination of the fæces she died of tuberculous meningitis. The post-mortem examination, beside confirming the diagnosis of tuberculous meningitis, showed that the left lung was infiltrated with tubercle, the apex of the upper lobe showing commencing cavitation, and the right upper lobe was also tuberculous. Smears from the cut surface of the tuberculous area showed tubercle bacilli in abundance. On careful examination no lesion of the intestinal tract could be found.

That tuberculous ulceration of the intestine need not necessarily give acid-fast bacilli in the fæces is demonstrated by the case of M. B. In this patient disease of the lung had not been suspected during life, the child had never been known to cough while under observation, and had had no blood or mucus in her stools. The fæces were twice examined with a negative result each time. She died, and at the post-mortem examination numerous tuberculous ulcers were found in the intestines. At the apex of the left upper lobe there were some small cavities filled with dry semi-caseous contents which showed tubercle bacilli on microscopic examination. Apparently the lung disease was quiescent, and therefore no sputum was being swallowed.

Alexander[8] examined the fæces of six patients with tuberculous glands, and of these two gave a positive result. In these two cases the glands were noted as being "very caseous," but no note is made as to the condition of the lungs. The writer has examined the fæces of five cases of tuberculous glands without lung involvement, in two of which tubercle bacilli had been found in pus aspirated from the glands, and all five cases were negative. Ten cases of tuberculous peritonitis without lung involvement were also examined and these proved negative also.

Various authors have referred briefly to a variation of the number of acid-fast bacilli in the fæces corresponding to variations in the amount of sputum swallowed per day. The case quoted above (M. B.) rather bears out this point of view, and the following case is also confirmatory. This patient (S. B.) coughed up some sputum containing tubercle bacilli on one occasion prior to admission. Ten weeks later she was admitted to hospital, and on examination her general condition was found to be good, she had no cough nor sputum, and the examination of her fæces was negative. Nine months later she had a relapse with cough and general malaise, but no sputum. Her fæces were now found to contain acid-fast bacilli.

It is not unusual for children whose sputum has shown tubercle bacilli to cease to expectorate as their condition improves although cough may persist. In such cases I have found acid-fast bacilli persisting in the fæces for periods up to 11 months after the last specimen of sputum had been obtained.

Discussion.

A study of the evidence submitted shows that there is little doubt that the acid-fast bacilli found in the fæces of children suffering from pulmonary tuberculosis are tubercle bacilli. Further, it would appear that in the majority of cases in which bacilli are thus found they are derived from sputum which has been swallowed. The possibility of such bacilli being derived from tuberculous ulceration of the intestine had been considered, and though the evidence is small, it is such as to suggest that this is not frequently the source.

Analysis of the Cases Investigated.

1. *Sputum T.B.+. Fæces T.B.+.*—Fifty-two cases were investigated. In all these cases the physical signs were well marked, the sputum contained tubercle bacilli, and acid-fast bacilli were present in the fæces.

2. *Sputum previously T.B.+. Subsequently no Sputum for not less than two months. Fæces T.B.+.*—Five cases examined, all of whom showed definite clinical signs. Their sputum had contained tubercle bacilli, but they subsequently improved, and had not expectorated for a period of not less than two months. Acid-fast bacilli were found in the fæces at intervals at 2, 2, 5, 10 and 11 months after the last positive sputum result.

3. *Sputum T.B. 0. Fæces T.B.+. Sputum subsequently T.B.+.*—One case. This child had signs of disease of the apex of the left upper lobe. The sputum when first examined showed no tubercle bacilli, but the fæces 25 days later contained acid-fast bacilli. A specimen of sputum containing tubercle bacilli was obtained three months after examination of the fæces.

4. *No Sputum. Fæces T.B.+.*—Twenty-seven cases. Of these 18 had definite signs of pulmonary tuberculosis, in six others the signs were well marked, but were indicative of fibrosis of the lung, and in the remaining three the physical signs were slight, but suggested the probability of a lesion of the lungs. At the time of the examination sputum could not be obtained from any of these cases, but the fæces showed acid-fast bacilli in all. Three of the cases coughed up sputum containing tubercle bacilli subsequently, the interval after the examination of fæces being three days in one case, 21 days in the second case, and 44 days in the third case.

5. *Sputum had been T.B.+, but was T.B. 0 at time of Examination. Fæces T.B. 0.*—In three cases with well-marked physical signs over the greater part of both lungs tubercle bacilli had previously been found in the sputum. At the time of examination the sputum did not contain tubercle bacilli, nor were acid-fast bacilli discovered in the fæces. The interval between the T.B.+ sputum result and the examination of the fæces was one month in the first case, two months in the second, and seven months in the third.

6. *Sputum absent, but previously T.B.+. Fæces T.B. 0.*—Five cases, all with definite clinical signs. In these cases the sputum had contained tubercle bacilli, but at the time of the examination these patients were not coughing up any sputum. The fæces gave a negative result in all. The intervals between the T.B.+ sputum result and the examination of the fæces were 1, 3, 4, 11 and 11 months.

7. *Sputum T.B. 0, subsequently T.B.+ once. Fæces T.B. 0.*—In one case in which the signs were those of a pleural effusion on the left side both sputum and fæces examination gave negative results, but three months later this patient coughed up sputum containing tubercle bacilli.

8. *Sputum T.B. 0. Fæces T.B. 0.*—In 31 cases in which the sputum examination was negative for tubercle bacilli the fæces also gave negative results. Of these cases 11 had evident physical signs upon which the diagnosis of pulmonary tuberculosis was made; in 12 the signs were those of fibrosis of the lung; in eight the only physical signs present were slight impairment of percussion note at one or other apex with in some cases altered breath sounds.

9. *No Sputum. Fæces T.B. 0.*—In 56 cases from whom no sputum could be obtained the examination of the fæces proved negative. In 16 of these the lung signs though not extensive were evident; 25 gave signs of fibrosis of the lung, and in 15 the only physical signs present were some alteration of the percussion note at one or other apex with, in some cases, weakened breath sounds.

10. Ten cases of tuberculous peritonitis, without lung involvement, were examined, but in all the result of the examination of the fæces was negative.

11. Five cases of tuberculous cervical glands, without lung involvement, gave a negative result on examination of the fæces. In two of these pus aspirated from the glands contained tubercle bacilli.

Controls.—Twenty-nine cases. A number of patients, suffering from other diseases or with no physical signs of disease, were examined as controls, and in all these the results obtained from the fæces were negative. In the majority no sputum was being expectorated, but in those with sputum the examination of the sputum was made with a negative result. The following is a list of these cases.

One case of bronchiectasis. Sputum T.B. 0.

One case of thickened pleura following a pleural effusion four years before. Sputum T.B. 0.

Three cases with no physical signs. Sputum T.B. 0.

Thirteen cases with no physical signs of disease and no sputum.

Eleven cases suffering from other disease such as enlarged tonsils and adenoids (1), bronchitis (1), pyonephrosis (1), rickets (1), congenital morbus cordis (1), debility (1), congenital syphilis (1), tuberculous dactylitis (1), and thickened pleura (3 cases). In all these cases no sputum was available.

Value of the Method in Diagnosis.

A study of the analysis of the cases shows that in 100 per cent. of cases in whom the sputum consistently showed tubercle bacilli such bacilli were demonstrable in the fæces. Further, in no case in which the sputum result was negative on repeated examination could tubercle bacilli be found in the fæces.

The fæces of 85 cases gave a positive result, and of these 57 showed tubercle bacilli in their sputum at the time of the examination of the stools, and in four other cases tubercle bacilli were subsequently found in the sputum. Thus of the 85 cases 61 gave a positive sputum and fæces result, and 24 a positive fæces result only. In the majority of these patients the symptoms and physical signs were sufficiently marked as to leave little doubt as to the diagnosis, but the advantage of obtaining definite confirmatory evidence when no sputum is available in such a high

proportion of cases (24 out of 85) is sufficiently obvious to need no stressing.

Where the clinical signs are not so definite the results of the examination still show its value. Thus of the 225 cases examined 181 were diagnosed on clinical grounds as suffering from pulmonary tuberculosis, or were under observation for suspected pulmonary tuberculosis. Of these 70 showed tubercle bacilli in the sputum at one time or another—a percentage of 38·6, while 85 showed tubercle bacilli in the fæces—a percentage of 46·9.

No case which clinically showed no sign of pulmonary tuberculosis gave a positive result on examination of the fæces.

The differential diagnosis between non-tuberculous fibrosis of the lung and pulmonary tuberculosis in children is often one of considerable difficulty. In this series 37 cases were diagnosed on admission as fibrosis of the lung, but six of these on examination showed T.B. in the fæces, thus helping considerably in settling the diagnosis and treatment. It would appear therefore that the main use of the method in future will be in helping to establish the diagnosis in cases of suspected pulmonary tuberculosis and in differential diagnosis. The diagnosis of tuberculous ulceration of the intestine by this method would not appear to be reliable.

Value in Prognosis.

It has been shown above that in a proportion of cases the sputum at one time had contained tubercle bacilli, but at the time of examination did not do so, and yet tubercle bacilli were demonstrated in the fæces at periods extending to 11 months after the last T.B. sputum had been obtained. In such cases the symptoms, physical signs, and progress of the patients were such as to suggest that the lung disease was quiescent. These findings tend to show that an expression of opinion as to quiescence of the disease as judged by symptoms, physical examination, and absence of sputum should be given only with extreme caution. Examination of the fæces should be included in the factors to be considered in giving an opinion as to the advisability of further treatment and prognosis. If no tubercle bacilli can be found in the sputum the prognosis in children is better than if they are present. But the subjoined table of after-history results shows how nearly the course of cases with T.B. in the fæces tallies with those in whom T.B. are present in the sputum. The results in the two classes run parallel, and thus demonstrate that if no sputum is obtainable it is necessary to examine the fæces in order to be able to form a just opinion as to the prognosis.

Cases.	Dead.	Worse.	Stationary.	Improving.	Quiescent.
27 with T.B. in fæces but no sputum.	2 (7·4%)	10 (37%)	5 (18·6%)	8 (29·6%)	2 (7·4%)
50 with T.B. in sputum and fæces.	4 (8%)	18 (36%)	9 (18%)	16 (32%)	3 (6%)

Summary.

On review of the evidence submitted it would appear: 1. That non-pathogenic acid-fast and alcohol-fast bacilli are not found in human fæces, and that tubercle bacilli are not found in the fæces of healthy individuals. 2. Tubercle bacilli, if present in the sputum, can be demonstrated in the fæces in 100 per cent. of cases. 3. In no case in which the sputum on repeated examination was negative for tubercle bacilli were these bacilli found in the fæces. 4. In children suffering from pulmonary tuberculosis tubercle bacilli can frequently be found in the fæces when no sputum can be obtained for examination. 5. The presence of tubercle bacilli in the fæces is not necessarily evidence of an intestinal lesion. 6. In children, who so frequently swallow their sputum, the examination of the fæces for T.B. can be more generally applied than the sputum examination, and yields a higher percentage of positive results. 7. It is in consequence of definite value in diagnosis and prognosis.

The writer feels that a method which, though very little more intricate than the routine one for examination of sputum for T.B., increases the certainty of diagnosis by at least 9 per cent. is worthy of an extended trial, especially with regard to children.

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THE TREATMENT OF RECENT "POTT'S FRACTURE."

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FOR the purposes of this article I am including under the title of "Pott's fracture" any fracture in the neighbourhood of the ankle-joint, where there is either backward or outward displacement of the foot, or both together. This is a subject to which much thought has been given, on which much labour has been spent, and about which, to judge by the literature, opinions differ materially. Unfortunately, the results of treatment in the past have, on the whole, been unsatisfactory. The method to be described is simple. In my hands it has been uniformly successful.

Diagnosis.

As in many of the patients the region of the ankle is greatly swollen, recourse should be had to X rays as soon as possible to confirm the clinical findings. Should the displacement be obvious, no time must be wasted if a skiagram cannot be obtained immediately. The earlier the nature of the injury is accurately diagnosed and treated the better; reduction is easy when the soft parts are not fixed by adhesions; any pressure of bone ends on skin, blood-vessels, or nerves is relieved; the muscles have not contracted down and shortened the limb, nor has the blood and lymph exudate become organised. Other things being equal, the earlier the fragments are replaced the sooner will the patient be fit to resume his normal mode of life. Radiograms should be taken from at least two aspects, antero-posteriorly and laterally; occasionally a stereoscopic view may be valuable.

The Anæsthetic.

To my mind spinal analgesia is the ideal method of rendering the manipulations painless; at the same time it produces absolute relaxation of the muscles; however, those who do not care to employ it will secure satisfactory results, in the majority of cases, with any form of general anæsthesia. Occasionally, indeed, an anæsthetic is not required; merely putting the leg up in the manner to be described will suffice. Inhalation anæsthesia has several disadvantages; the struggling which often occurs during the process of induction may increase the displacement and a simple fracture may be converted into a compound one. The anæsthetic has to be pushed to produce the same degree of relaxation as is obtained with a small dose of stovaine intrathecally. During the period of recovery a good result may be nullified by the movements of the patient. I find the only contra-indications to the use of spinal analgesia in the treatment of lower limb fractures are extreme youth, certain nervous disorders, and the desire of the patient to be "put to sleep." In the case of an adult, 30 minims of

nepenthe by mouth 20 minutes before the operation helps to allay any anxiety that may be felt by a nervous subject. The solution used is 5 per cent. stovaine with glucose; 1 c.cm. of this contains 6 cg. of stovaine, an ordinary dose; however, ½ c.cm. gives adequate relaxation for manipulations around the ankle. Owing to the small amount used, the injection should be made just to that side of the mid-line corresponding to the side of the fracture. When the needle has been withdrawn, the patient is either left lying on the injured side for three minutes, or, if he has been sitting up, he is laid on his back with a sandbag under the buttock of the sound limb. This serves to localise the effect of the stovaine.

The Manipulations.

About ten minutes after the injection the limb is thoroughly cleaned; the parts to be grasped by the surgeon are well powdered. Stockinet, sufficient to cover the foot and the lower three-quarters of the leg, is passed over the foot so as to leave the ankle exposed. A few vertical strips of adhesive strapping attach the upper end of the stockinet to the leg. The strapping must not cross the tibial crest owing to the risk of cutting through the skin here. The surgeon stands to the inner side of the affected limb. Where the injury is on the left side, he grasps with his left hand the inner surface of the leg immediately above the fracture. He takes the heel in the palm of his right hand, the fingers of this hand extending around the outer border of the foot on to the dorsum. The reduction is effected by pushing the leg downwards and outwards with the left hand, and pulling the foot upwards and inwards with the right. Occasionally traction is required, but usually the reduction is carried out by the one movement described. Should there be difficulty in overcoming the backward displacement, the patient is brought down the bed so that the foot projects beyond the end. A loop of towelling is then placed over the lower part of the leg. The heel is supported by both hands. The surgeon places his foot in the loop. By pressing downwards with his foot and at the same time lifting upwards with his hands, the backward displacement is corrected. The fewer the movements made to get the alignment, the less will be the damage to the soft parts, and the sooner the return to normal. The stockinet is pulled down over the foot and fixed to the upper bar of the cradle in such a way as to produce the maximum degree of dorsiflexion at the ankle. The leg is bandaged from below upwards over the stockinet and strapping. The ankle is palpated through the stockinet to make sure the desired position is maintained. If there is a blister or a wound the stockinet is cut away over it to permit the application of dressings. A loop of bandage is passed around the ankle and fixed to the outer and lowest bar of the Salter's cradle; another bandage is looped around the foot at the level of the metatarsal heads and tied to the upmost bar on the inner side. These bandages are prevented from slipping by fixing them with adhesive strapping. This arrangement helps to maintain the inversion of the foot. The weight of the leg prevents the backward displacement from recurring. The cradle is firmly fixed to the bed by bandages. For those patients with epilepsy or delirium tremens, it is advisable to apply a light removable plaster-of-Paris case around the stockinet; the limb is left suspended as usual. In very restless patients the limb may be absolutely immobilised by fixing it to the sides of the cradle with several loops of plaster-of-Paris bandage. The ankle may now be screened, and any readjustment made before the effects of the stovaine have worn off. I have rarely found this necessary; two skiagrams are taken later at a convenient time to record the fact that the correct alignment has been obtained.

After-treatment.

The bandage around the leg is removed daily, and effleurage carried out through the stockinet, thereby encouraging early absorption of the effusion. All parts of the limb can satisfactorily be massaged without the risk of the masseur displacing the fragments. The other bandages are adjusted as they become loose. As soon as the major portion of the swelling has subsided, I adopt one of two methods of ambulatory treatment. My customary practice was to enclose the foot and leg in a light removable plaster case. The patient was then allowed to get about with the aid of crutches. The alternative method, which I at present am trying out, is to apply a plaster of the Delbet type (well described in "Minor Surgery and Bandaging" by Gwynne Williams) and permit the patient to walk on the foot at once. Personally I think the former method, except in perhaps the hands of "Delbet" enthusiasts, will give more general satisfaction. At the end of three weeks, or a little longer if the fracture has been a bad one, the patient gradually puts his weight on the plaster. As progress is made, so are the crutches replaced by sticks, and the sticks used less and less. From five to eight weeks from the date of fracture he is fitted with a boot, the inner edge of which is raised from a quarter to half an inch. The upper of the boot may with advantage be strengthened on the inner side so that, when laced, it prevents any tendency to inward displacement.

Results.

I have now treated more than 30 successive cases with outward and backward displacement of the foot by this method, with uniformly good results. In only one has a fracture set in this way required any further manipulation. This patient, a man of 71 years, suffering also from delirium tremens, was so restless that his limb had to be reset and secured in a plaster case.

The advantages claimed for this method of treatment are: (1) The patient does not lose consciousness. (2) A minimum dose of stovaine is used. (3) There is no risk of pressure sores. (4) Absence of discomfort after the stockinet has been applied. (5) Very small chance of recurrence of displacement once reduction has been effected. (6) Greater freedom of movement at the ankle-joint. (7) Ability to walk earlier.

I have to thank Dr. W. G. Bendle, medical superintendent of the Paddington Infirmary, for permission to treat these cases and to publish the results.

PS.—Since writing the above article I have read the report in THE LANCET (Jan. 2nd and 9th, 1926) of the discussion in Manchester under the auspices of the British Orthopædic Association, on the treatment of this type of fracture. More than ever do I feel that the stockinet method, being so simple, and, with me, so satisfactory, should be given an extended trial. As a comment on the discussion, may I say that I feel sure it is a mistake to immobilise these fractures for any length of time; in fact, since using the modified Delbet method, I am certain that the sooner the patient can be made to walk on the injured limb, the sooner will he recover. The great disadvantages of immobilisation of the leg are that the muscles become atrophied even with daily massage, the patient imagines his injury is worse than it really is, loses confidence in his ability to walk, and has to be re-educated in the lost art. It was while attempting to maintain the fragments in position in a difficult backward displacement of the foot that the above method was evolved; however, some of the results quoted in the discussion must have been due, in my opinion, to the fact that inexperienced residents were treating the cases. The mismanagement of this type of fracture provides a strong argument in favour of Sir Robert Jones's plea for a special fracture service attached to each large hospital.

ROCKEFELLER FOUNDATION GIFT TO NORWAY.—The Foundation has offered the Norwegian Government a sum not exceeding 1,065,000 kroner for the completion of the work on the projected new Government institute for serum and vaccine research. The offer has been thankfully accepted

A CASE OF HERNIA OF THE STOMACH AND TRANSVERSE COLON THROUGH THE DIAPHRAGM.

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AND
J. FAWCETT, M.D., F.R.C.P. LOND.

With a Note on the X Ray Examination by Mr. LINDSAY LOCKE *and a Note on the Operation by* Mr. T. P. DUNHILL.

THE condition about to be described is one of considerable rarity and interest and is therefore worthy of record.

Mrs. E. D., aged 60, began to have pain in the front of the chest accompanied by flatulence and a feeling of oppression when she was about 40 years old. For the last seven years she had suffered from sudden and severe attacks of abdominal pain of obscure origin. The pain was situated mainly in the left hypochondriac region radiating over the lower costal margin towards the mid-line. It lasted generally for about six or seven hours and terminated by an attack of vomiting. For the past two or three years the patient had not been free from severe attacks for a longer interval than six weeks, and between these she had suffered from slighter seizures. The attacks were quite irregular in onset, occurring at any time of day or night, but in the intervals there was no pain. In 1921 hæmatemesis first occurred, and again in 1922. On May 10th, 1924, a very severe attack of pain took place accompanied by frequent vomiting which lasted for 48 hours; after the first 12 hours the vomit contained clots of blood and subsequently "coffee grounds."

The patient stated that she had been constipated all her life. From the age of 9 to 20 years she had been subject to attacks of headache and vomiting; but otherwise there was nothing in her past medical history which had any obvious bearing on her condition.

On *physical examination* no gross lesion was discovered. The only abnormal physical signs were that over the left side of the chest behind and below the angle of the scapula there was impairment of resonance on percussion and the respiratory murmur was deficient.

The sudden and severe paroxysms of abdominal pain and vomiting, accompanied on three occasions by hæmatemesis, were quite unlike those due to the usual causes of pain in the region referred to. The attacks at once suggested to our minds the likelihood of a temporary strangulation—a kink of some part of the stomach or upper portion of the small intestine in, for example, a retroperitoneal pouch. In view of the increasing severity and frequency of the attacks it was decided that an exploratory operation was necessary, but before proceeding further it was decided to advise the patient to have an X ray examination of the stomach and alimentary canal, after administration of a barium meal, with the object of more accurately establishing the diagnosis.

Note by Mr. LINDSAY LOCKE.

"The abnormal conditions found at the X ray examination were:—

"The displacement of the heart to the right. This appeared to be due to something causing a shadow which encroached on the base of the left lung. The fact that the upper domed limit of this shadow moved on respiration synchronously with the right diaphragm would indicate that it was not inflammatory—e.g., due to pleurisy—and also that the left diaphragm was still able to contract.

"The stomach was practically inverted in position, and what should have been the lowest part of the greater curvature in its normal position now came to lie on a level with the third rib and formed the highest part of the dome. The pyloric end of the stomach overlay the cardiac orifice. The line of the left diaphragm was not visible. The transverse colon was looped up to the highest point of the stomach and its afferent and efferent limbs lay close together, suggesting that they were passing through a hole.

"The differential X ray diagnosis lay between hernia of part of the stomach and colon through the diaphragm and an ulcer causing distortion by cicatricial contractions, but this latter condition did not explain the high position of the stomach, so we were left with diaphragmatic hernia as the only explanation."

Note by Mr. T. P. DUNHILL.

"When the patient was first seen by me the X ray examination had already been made and it was known that the position of the stomach and part of the transverse colon was not normal. It is probable, in the light of the patient's history, the operation findings, and Mr. J. B. Hume's researches, that this malposition was congenital—indigestion had been present for 20 years—but in recent years the discomfort had become very troublesome, and attacks of pain and vomiting had occurred with increasing frequency and severity. There had been considerable loss of weight. The onset of hæmatemesis added another important sign; this might have been due to ulceration—innocent or malignant—but was more likely to be due to partial strangulation—kinking of the stomach across the edge of the diaphragmatic opening—the pressure being first manifested on the soft-walled veins. The symptoms, the signs, and the X ray evidence were such as to make exploration imperative. The operation was planned so that a thoracic and an abdominal incision could be joined if found necessary or advisable, the abdominal incision to be made first for purposes of exploration, so that the time that the thoracic cavity would need to be kept open should be reduced to the minimum.

"*Operation.*—On July 22nd, 1924, under intratracheal gas and oxygen with a little ether (Dr. I. W. Magill), Dr. Chittenden Bridges and Mr. Geoffrey Keynes assisting, the abdomen was opened by a left paramedian incision. On lifting the edges of the incision neither stomach, great omentum, nor left lobe of the liver could be seen. A loop of transverse colon was seen disappearing through the left dome of the diaphragm. This loop, together with the great omentum, could be withdrawn by gentle traction without difficulty from the aperture in the diaphragm. Further traction brought into view the greater curvature and then the whole stomach. There were no adhesions. A hand as far as the wrist could be passed through the opening into the thorax, and the heart, surrounded by its pericardium, palpated. With this hand in the thoracic cavity it was easy, by bimanual palpation, to decide on the right rib to remove at the later stage. The stomach readily slipped back into the thoracic cavity, which had evidently become its home. It was obvious that the left lobe of the liver was rudimentary. The investigation being completed, the abdomen was temporarily closed by three through-and-through sutures, in order to protect it, while the thorax was being opened. An incision about 8 in. long was made over the eighth rib—a dependent breast having to be well drawn up—about 7 in. or 8 in. of this rib removed, and the thorax opened. By means of a rib-spreader excellent access was obtained. The dome of the hernial sac covered with pleura was seen and the pleura incised. It stripped off easily from the peritoneum which constituted the sac. This was then incised and its glistening inner surface found to be continuous with the peritoneal cavity.

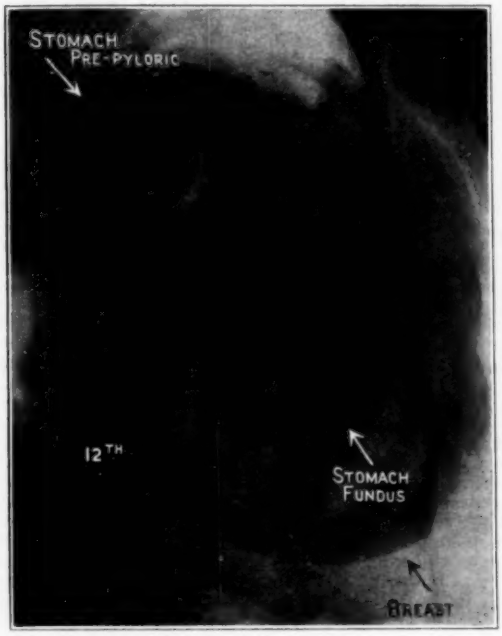
"The left margin of the defect in the diaphragm was well felt and seen. On the right side the margin was not felt and seemed to be lost in the diaphragmatic aspect of the pericardium. The three sutures which had temporarily closed the abdominal incision were removed and the stomach gradually drawn down again into the abdomen by my assistant. It appeared from this aspect that the cardia was just above the level of the diaphragm, as though the condition were congenital and the œsophagus rather shortened. As there was not a good free right margin to the defect the left margin was sutured to the base of the pericardium and to the tissues surrounding the œsophagus, this being done from the thoracic aspect. In this way the defect was well closed, but at a rather higher level than normal. It did not make a normal diaphragm, but it made a barrier against the entry of the abdominal viscera into the thorax. The chest wall was then carefully sutured.

"From the abdominal incision three catgut sutures were passed through the sero-muscular coats of the anterior surface of the stomach, and two others through the meso-colon at a point which corresponded to the apex of the loop of colon which had become accustomed to dwell in the thorax. Each of these sutures was passed through the parietal peritoneum at the appropriate spot and tied, thus giving the stomach and colon sufficient anchorage to maintain these organs in their new position until the repaired diaphragm became organised. The abdominal incision was then closed in the usual manner."

Discussion.

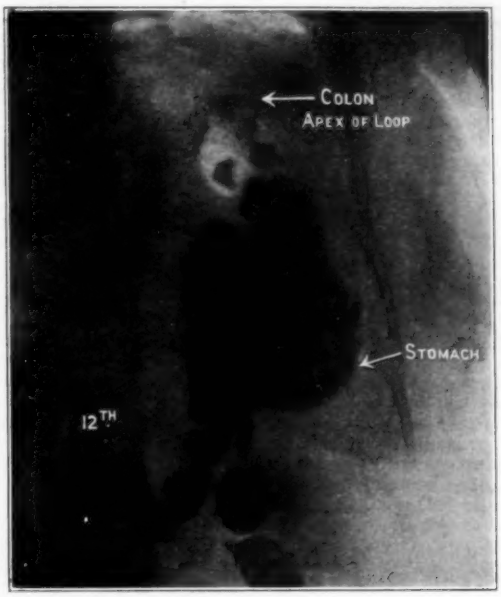
As confirmed by operation the case proved to be one of considerable rarity, due to a congenital defect

FIG. 1.



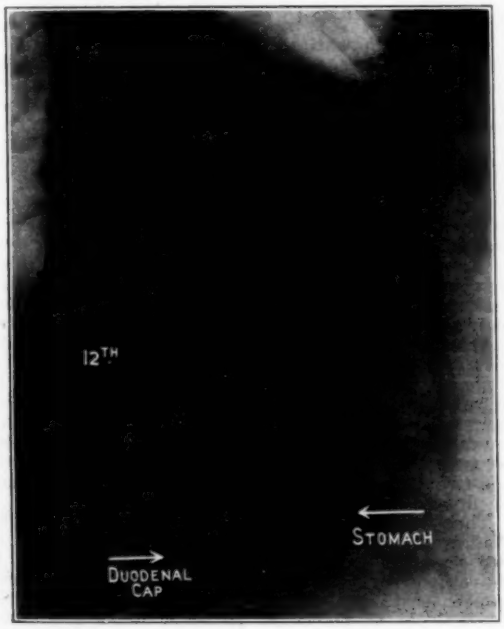
Before operation: The pyloric end of the stomach reaches the third costal cartilage.

FIG. 2.



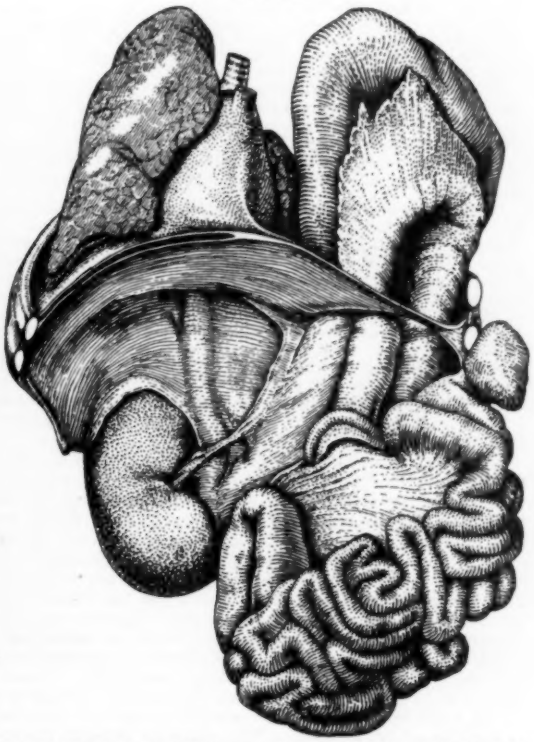
Before operation: Loop of colon high in the hernial sac.

FIG. 3.



Three months after operation: Axis of stomach lies normally.

FIG. 4.



Hernia through the left dome of the diaphragm. The liver has been removed. (After J. B Hume, *Brit. Jour. of Surg.*, October, 1922.)

of the diaphragm, the hernia, as in most cases, entering the left pleural cavity, and consisting of the stomach and a portion of the colon; this subject has been well discussed by Mr. J. B. Hume.[1] The physical signs over the lower part of the left side of the thorax posteriorly, which were detected in a quiescent period after an acute attack, were no doubt the result of the defect in the diaphragm, which interfered with the normal respiratory movement of that side of the chest. Usually the thoracic signs are almost identical with those of pneumothorax in the lower part of the chest giving rise to a tympanitic note on percussion, fixation of the chest wall, displacement of the heart, with absent respiratory murmur and voice sounds. It would have been of interest to know if like signs existed during an acute attack; but even if they had been present the prominent abdominal symptoms of severe colic and vomiting would have made it clear that the thoracic signs were of secondary importance.

X Ray Examination Three Months Later.—This showed the left diaphragm to be extremely high, but the stomach is shown with its fundus and pylorus in the right relationship. Barium passed into the colon, and this organ did not enter into the thoracic cavity.

Eighteen Months after Operation.—The patient has increased in weight by 2 st. She has lost all symptoms of dyspepsia and expresses herself as never having been so well before.

A NEW METHOD OF PHYSICAL EXAMINATION (ECTOSCOPY).

BY DR. EDUARD WEISZ,
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WITH the aid of ectoscopy a diagnosis of the following conditions becomes possible.

1. The lower limit of a pleural effusion can usually be easily ascertained, though this has not hitherto been demonstrable, even by radiography.
2. Even low down posteriorly one may be able by this method to localise small effusions in the pleural space, where hitherto it has been impossible to find them, and to verify them by exploratory puncture.
3. By means of ectoscopy it is possible to localise small encysted quantities of fluid or pus from burrowing abscesses in the tissues when this is impossible by other methods, so that the first puncture with a needle reaches the fluid.
4. In the domain of gastric and intestinal disorders it is often possible to differentiate between functional and organic disorders.
5. Any trace of peritoneal irritation can immediately be demonstrated by ectoscopy, its origin localised, and its progress to peritonitis or, in a favourable case, its retrogression, may be followed ectoscopically with the naked eye.
6. In gynæcology acute inflammatory affections of the appendages can usually be recognised at the first glance and differentiated from all other pelvic conditions. In a case of ectopic gestation the progress and position of the rupture may be recognised with the naked eye.
7. The ectoscopic method can also be used in neurology, as, for example, in the diagnosis of the obscure origin of masked or abortive hemiplegic affections—sometimes many years after a hemiplegia has healed evidence of the occurrence may thus still be forthcoming.

All these observations may be made with the naked eye without touching the patient.

Of all the various ectoscopic phenomena to be observed on the thorax, abdomen, and back by applying the appropriate technique, only the "speech phenomenon" will be described here, as this has been worked out most fully and appears to be the most important. Just as the face shows the movements of expression so also may various speech movements be observed on the trunk; the "thoracic or intercostal speech phenomenon," the "abdominal speech phenomenon," and the "lumbar speech phenomenon." Technically it is important to note that the speech movements (speech phenomena) can only be well seen at the beginning of phonation. The patient should, therefore, be instructed only to enunciate single words or syllables very slowly—e.g., counting up to ten in the intervals. Up to a point an increased effort in the enunciation increases the speech phenomenon, but if the effort is excessive, optimum results are not obtained. As the speech phenomena are readily altered by alterations in the attitude and position of the patient it is important, when comparing the left side of the body with the right, to ascertain that the essential symmetry of the body is maintained by a correct attitude.

Principles of Ectoscopy.

Of what, then, do these phenomena consist? In those parts of the thorax not covered by large masses of muscle or by the scapula—i.e., where the intercostal spaces are at least partly visible—the following may be observed. At the beginning of each effort of speech the intercostal furrows disappear and the intercostal wall not only rises to the level of the ribs but protrudes beyond. As the sound of the word of one syllable dies away again this intercostal protrusion also subsides to its original level. If one, then, after an interval instructs the patient to speak again, one can obtain a repetition of the intercostal protrusion as often as desired.

The intercostal speech phenomenon—i.e., the phonetic protrusion of the intercostal spaces—is due to the more or less complete closure of the glottis during phonation; as a result the air squeezed upwards by abdominal contraction cannot escape sufficiently rapidly by this route, so that, analogous to an explosion on a small scale, the excessive expiratory pressure forces the lung into the intercostal spaces and forces them outwards. The intercostal speech phenomenon can be best seen in the second and third intercostal spaces in the parasternal line, laterally in the lower axillary region, and posteriorly on the lower part of the thorax as far as the scapula line. In most patients the intercostal speech phenomenon is most obvious at the borders of the lungs. This is due to the fact that the intercostal protrusion produced by speech can only be effected by the outward pressure of the lung, and not by the more solid organs of the spleen and liver which lie below the diaphragm and are, on account of their firmer consistency, not sufficiently pliable to be readily forced into the intercostal space so as to cause them to protrude.

Diagnostic Value of Ectoscopy.

Thus the speech phenomenon separates the solid organs of the liver and spleen from the lung, and is therefore useful in defining the level of the patient's diaphragm. How, then, does an effusion in the pleural space modify the speech phenomenon in the intercostal spaces? As the intercostal protrusion during speech seems to be a phenomenon depending on the compression of air, it might be supposed that the fluid of an effusion would, by its very nature, be unable similarly to follow all the speech movements of the thorax. In effect, however, a pleural exudate also shows the speech phenomena well; the impulses and movements are readily transmitted to a fluid pleural effusion, and the waves thus produced become visible in the intercostal spaces which are protruded by the impact of these waves just as they are by the "phonetically" compressed air in the lungs. As, however, as already mentioned, the liver and spleen cannot take part in these "phonetic" protrusions, the lower limit of an effusion may readily be separated ectoscopically from the upper margin of the spleen and liver, which has not been possible by the methods of physical examination hitherto available.

Thus the area mapped out by the radiographic shadow and by dullness on percussion is divided into two separate parts by the speech phenomenon. In the upper part the intercostal spaces move during speech as they do over the lung; this, therefore, corresponds to the fluid effusion, while the lower remains stationary during speech and therefore contains liver and spleen. If a line be drawn across the area of dullness between that portion which moves during speech and that which does not, a needle will draw fluid at any point above the line, but puncture

[1] Hume, J. B.: Brit. Jour. Surg., vol. x., No. 38.

below will give a negative result. By this means it is possible to isolate small quantities of fluid posteriorly from a large area of dullness on percussion.

A very important and extraordinarily interesting field for the application of the ectoscopic method is in the diagnosis of encysted fluid or a hidden abscess situated in the middle of a mass of dense tissue, the fluid nature of whose contents can be demonstrated neither by X rays nor by percussion. The following case is an example :—

A few years ago a young woman consulted me with a history that she had been to numerous doctors, had been X rayed several times at two different clinics, that an exploratory needle had on several occasions been inserted below the shoulder-blade, but no diagnosis had been reached. On examination an area of dullness barely the size of a child's hand was found between the scapular and paravertebral lines. Though I had not much experience in such matters, I did think of the possibility of an encysted effusion. I instructed the patient to repeat the word "kitt" at slow intervals, but the area of dullness remained unaffected; it did not move. Apparently it consisted of solid tissue, a tumour, an indurated mass of some sort. At length I noticed that in the centre of the quiescent area a small spot less than a finger-nail in diameter moved a barely visible amount during speech. If anywhere, therefore, a needle should draw fluid at this point. Superficial puncture produced no result, but a second puncture at the same spot resulted in several drops of pus, and a subsequent puncture with a longer and stronger needle produced half a syringeful of pus. At this point a surgeon was called into consultation at the clinic, and spondylitis (? spinal caries) with burrowing abscess diagnosed. The treatment consisted of a plaster jacket and subsequently a surgical corset.

In the *pathology of the abdomen and pelvis* the abdominal and lumbar speech phenomena show as follows. If one watches the back or abdomen of a person speaking one sees all sorts of movements, partly active and partly passive, in the abdominal and lumbar body wall with each effort of speech. If there is any painful or acutely inflammatory process present within the abdomen, especially one associated with traces of peritoneal irritation, the speech movements are found to be entirely absent as compared with the other unaffected areas. The rest of the abdomen speaks, the affected (diseased) area is silent. Automatic reflexes here ensure that, during speech, the areas which are diseased and particularly sensitive to mechanical pressure and strain shall not be affected by the speech movements. The diseased abdominal organs must be kept at rest at all costs, and reflex muscular inhibitions during speech help to effect this. One is reminded of the absence of movement of the "muscles on guard" in cases of appendicular irritability, in which the reflex muscular inhibitions of the abdominal wall are able to protect the focus of disease from all mechanical irritation. As a counterpart to this *défense externe* the speech block may be described as a *défense interne phonatorique*. In comparison with the former the latter is far more sensitive and extraordinarily delicate.

To cite only a few illustrative examples from my collection of cases :—

Perforation of a gastric carcinoma seen a few hours after rupture. The left upper quadrant of the abdomen does not move during speech. The perforation is therefore probably situated here. Tuberculous peritonitis: A quarter of the abdomen is at rest, three-quarters move with speech. Apparently, therefore, three-quarters of the abdomen are unaffected. Fistulous abdominal tuberculosis: Three quadrants of the abdomen are silent, only one quadrant speaks. Gastric ulcer: The left half of the gastric area is at rest. Duodenal ulcer: The right portion is silent. Cholecystitis: Right upper portion of the abdomen is "phonetically" inhibited.

An incipient cholecystitis is also associated with an absence of speech movements in the right upper portion of the abdomen, which spreads with the progress of the disease, and is again replaced by normal speech movements as the disease disappears. The gynæcologist has the advantage that he can palpate a diseased area fairly thoroughly before opening the abdomen, and can thus verify the ectoscopic findings as it were by an "autopsy in viva." My own limited experience in this field has been extensively confirmed by Weinzierl at Prof. Wagner's Clinic in Prague in his work covering some hundreds of cases. In every acute inflammation of the uterine appendages a corresponding inhibition or absence of the speech movements over the diseased focus is found. In all other pelvic lesions the speech movements remain normal. Thus it is possible to follow ectoscopically the development of an (abdominal) peritonitis from a pelvic peritonitis, and the progress from a partial to a general involvement of the peritoneum.

Applications of Ectoscopy to Neurology.

Next we will deal briefly with the applications of ectoscopy to neurology. Since speech movements and reflexes are connected there must also be some connexion between speech movements and the diseases of the nervous system. This connexion is most obvious in the unilateral affection of a typical hemiplegia. If we watch the speech movements of the abdomen and back in one of these patients with unilateral paralysis we find—as is to be expected—that during phonation the unaffected half of the back and abdomen moves normally—i.e., the sound half speaks, while the paralysed half does not move; it remains silent. By this sensitive method one may the more readily prove the presence of a mild hemiplegic attack which has run its course rapidly and unnoticed. Similarly, one may demonstrate after many years by ectoscopic differences in the abdomen during speech the presence of an old hemiplegia which has apparently been completely cured. Naturally, the method fails occasionally and these failures have to be explained and elucidated; as exceptions they help to prove the rule.[1]

Technique.

Finally we will give a short description of the technique. On the abdomen and back the speech phenomena are generally so coarse as to be obvious to the observer without any further preparation. The position and posture of the patient have some effect. For example, when the patient is erect certain portions of the abdominal and dorsal musculature assume their normal tone, so that the movements of the abdominal wall usually appear less vigorous than when, as in the horizontal posture, the muscles are relaxed. It is therefore advisable, if possible, to examine the patient erect as well as recumbent.

As it is hardly possible without prolonged practice to observe the speech movements of the whole abdomen or back at once, so precisely as to obtain a mental impression of all the fine movements of each portion, it is advisable to examine the back or abdomen in small segments, one at a time, while the remainder of the back and abdomen is covered. The abdomen should preferably be divided into four quadrants by an imaginary cross having its centre at the umbilicus. According as to whether the upper right and left portions of the abdomen or the lower right and left portions are to be compared, the lower or upper half of the abdomen is covered with a towel. If the upper and lower quadrants of the same side are to be compared, the opposite half of the abdomen is covered. Similarly, the back may be divided up and covered.

Conditions in the thorax are not nearly so simple as in the abdomen. If the intercostal speech movements are to be examined one must proceed as follows. First of all, by placing the arms horizontally ("crucifixion attitude") the upper anterior intercostal spaces become more readily visible, and in them the speech movements. A useful position for examining the back is the "self-embracing" attitude. The fingers of the patient reach as far back as possible on the lateral thoracic wall. By this means the scapulæ, especially their lower portions, are displaced laterally as far as possible, and the medial borders of the scapulæ take up an oblique attitude instead of the normal vertical position. The inferior angle of the scapula is thus displaced several centimetres outwards and a larger area of the intercostal spaces on the posterior

[1] Further particulars appear in my book Diagnostik mit freiem Auge (Naked Eye Diagnosis), published by Urban and Schwarzenberg, Vienna and Berlin.

thoracic wall becomes accessible for observation of the speech movements. In order to examine the important lower axillary portion of the thorax it is best to instruct the patient to place his hand on his head, so that the whole lateral view may be unobstructed. In thin individuals no further manœuvres are generally required. If in the more obese there are no very obvious deep intercostal furrows various positions (stretching out, diagonal, &c.) should be tried in order to improve them. For example, when the back is examined, the patient should bend over forwards; when one side is examined, he should lean over to the opposite side. Sometimes a diagonal or oblique position between the two may be chosen. Excessive use of these positions is, however, not to be recommended, as the intercostal furrows thereby become too tense and the speech movements may be diminished rather than increased. In the excessively stout, in whom the adipose subcutaneous tissue hangs in massive folds, ectoscopy will generally have to be abandoned. But even here it is sometimes possible with the aid of both hands to draw thick folds of skin, as also the breasts of women, away from the field of observation and at least obtain a view of traces of the furrows which may possibly show traces of movements.

The word "kitt" has been found the most useful of the various types of syllables suitable for ectoscopy. The patient should be instructed to repeat this slowly at intervals of five to ten seconds.

MEDICINAL INDUCTION OF LABOUR: ITS CLINICAL ASPECT.

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SINCE the publication of A. C. Williamson's [1] paper on Induction of Labour by the Use of Castor Oil and Quinine, much interest has been taken by the staff of St. Mary's Hospitals in this particular treatment. During the last few years labour has been induced in a large number of cases by this method, or a slight modification of it. In consequence, the efficiency of quinine and castor oil combined in stimulating the uterus to contract has been well demonstrated, and the specific action of these drugs on the uterine muscle, which is discussed by Williamson, has been recognised.

The object of this paper, based on the observation of 78 cases, is an attempt to assign to this treatment its correct place in obstetrics. From its comparative harmlessness the method may be legitimately employed in almost any case where an early onset of labour is desired. There are, however, definite types of case in which its employment is specifically called for. It is the clinical aspect of this special treatment, therefore, with which I wish to deal, and the 78 cases dealt with in this paper were chosen from this point of view.

The drugs are administered in the following way. A dose of two ounces of castor oil is given, and one hour later half an ounce of a mixture containing quin. sulph., gr. x.; acid. sulph. dil., ℥x.; glycerine, ℥xx.; sp. chlor., ℥v., and water to the half-ounce. One hour after this a simple enema is administered. This is followed after two hours by another dose of the mixture, also three hours later and again after four hours. In the cases of this series, which were also treated with pituitrin, this was administered in ½ c.cm. doses half-hourly, and continued until 3 c.cm. had been given, the initial dose being used five hours after the last dose of quinine.

This method more nearly approximates to that described by Watson; 40 gr. of quinine are used in the course of treatment. If the patient complains of nausea or ringing in the ears the treatment is discontinued.

[1] Williamson: Surg., Gyn., and Obst., 1922, vol. xxxiv.

Indications.

Cases are often met with in the late months of pregnancy in which an immediate or early commencement of labour would be beneficial to the patient. In a large percentage of these, however, active interference to induce labour may be deemed unwise, both from the point of view of the risks involved and also on account of the uncertainty of the type of the resulting labour. The cases in which delivery by Cæsarean section may possibly be necessary, but in which a trial of labour would furnish valuable information, are those to which I now specially refer. The risk of sepsis after Cæsarean section is increased by examination or interference per vaginam beforehand, and so attempts to induce labour by mechanical means greatly add to the gravity of the prognosis should delivery by Cæsarean section to procure a living child become eventually necessary.

The chief and definite indication, then, for the induction of labour by medicinal means is in cases presenting uncertainty as to the progress of labour and in which induction by mechanical means is contra-indicated owing to the possible necessity of delivery by Cæsarean section. From this point of view induction may be necessary in either (*a*) primigravidæ or (*b*) multiparæ.

(*a*) Under this category comes the primigravida, who exhibits some degree of minor pelvic contraction (diagonal conjugate 4 inches). The presentation and position of the child being normal, the fœtal head may, at the time of observation, be: (1) Mobile at the pelvic brim—possibly due to causes other than the pelvic contraction; (2) fixed at the pelvic brim, but exhibiting some very slight degree of "overlapping"; (3) fixed but high, its greatest diameter being above the plane of the pelvic brim.

All points of this borderline type of case are taken into consideration, and it is adjudged that delivery per vias naturales is a sound possibility. Immediate induction of labour is deemed necessary to increase the possibility of obtaining a living child. The period of pregnancy may vary from eight months to post-maturity; 38 cases of my series belong to this class.

A good example is Mrs. H. B., a primigravida and two weeks post-mature. The fœtal head was mobile above the brim. The pelvis appeared normal. After the quinine and castor oil treatment labour commenced and the fœtal head passed through the brim. Interference was resorted to owing to the passage of meconium by the child in utero. On examination it was found that the umbilical cord was coiled twice round the child's neck. Delivery was effected by version, the forceps tending to slip when applied.

Another case was that of Mrs. L. F., a primigravida with a flattened pelvis. The diagonal conjugate was 4 inches. There was slight overlapping of the child's head above the brim, but I judged that it might be soft enough to pass through after moulding had taken place. Labour was induced and delivery terminated by the natural forces.

(*b*) The multipara, who is included under this category, may or may not exhibit pelvic contraction, but usually presents a history of previous difficult labours, either from this cause or from the size of the children. Free mobility of the fœtal head above the pelvic brim may be present, but, of course, has not the same significance as in a primigravida; 49 cases are varying examples of this type.

Mrs. M. T. had had one previous delivery by craniotomy at term. The pelvis was slightly contracted. The diagonal conjugate was 4½ inches. When seen, the patient was one week post-mature by dates, and the fœtal head was freely mobile above the brim, but as she was somewhat obese, it was not possible to gain much information by approximating the child's head to the brim manually. Labour was induced medicinally and its progress closely watched. Natural delivery was effected.

In another case, that of Mrs. E. W., there had been a previous difficult delivery by forceps, resulting in the birth of a dead child. Here, again, the pelvis was slightly contracted. The diagonal conjugate was 4½ inches. She was admitted when one week premature. The child's head was then freely mobile above the brim. Labour was immediately induced, and delivery of an 8½ lb. child effected by the natural forces.

In such cases one would hesitate to induce labour by mechanical means or to interfere per vaginam when the case presented such possibilities of difficult labour.

Apart from purely mechanical difficulties which may call for induction of labour by mechanical means, other types of case present themselves as eminently suited to this treatment; for example, cases of uterine inertia persisting beyond a reasonable time, especially if there is definite dilatation of the os, or the membranes have ruptured some hours previously. Four cases of my series are examples.

The third type of case, which is admirably suited to this treatment, is that comprising accidental hæmorrhage and marginal or lateral placenta prævia. In these cases medicinal induction of labour is attended with such success as largely to negative any mechanical method, which, besides, would greatly increase the risk of sepsis.

I have also been led to employ it in other types of cases in which the induction of labour might justifiably have been undertaken by mechanical means. In a number of these I have found that induction by bougies will almost invariably succeed at the first attempt if employed within 24 hours of the termination of the medicinal treatment. In these cases, therefore, I usually induce labour by bougies about 12 hours after the completion of the medicinal treatment if there are no signs of labour having commenced by then.

Cases of post-maturity react well to this treatment (25 cases). Induction of labour for severe albuminuria of pregnancy or threatened eclampsia is well carried out in this way (eight cases).

I therefore believe that although labour may fail to commence after this treatment alone, the specific action of the quinine on the uterine muscle is maintained to such a degree during the next 24 hours that added mechanical stimulation (by bougies) quickly brings about its regular contraction.

Effect on the Progress of Labour.

Patients in labour differ so markedly, both physically and temperamentally, that it is difficult to ascertain how far a particular type of labour may be due to treatment and how far to the patient's own nervous control. A number of cases suggested a definite shortening of the first stage, but further results were so irregular as to negative a constant finding.

The most regular feature which labours, carried out under the influence of quinine, exhibit is the relative painlessness of the uterine contractions—a feature present in fully 70 per cent. of cases in greater or less degree. In some it is so marked as to approach a condition of painless uterine contraction, the uterus having often to be carefully watched in order to determine that labour is in progress. The mother in such cases believes that she is not yet in labour, and in this a danger lies, especially in that type of case which demands to be closely watched. In other ways the labour progresses along normal lines. It must be remembered, however, that the cases which receive this treatment hold prospective difficulties in the type of labour and are hence, of necessity, prolonged. The pulse and temperature show no variation from the normal type.

Interference During Labour.—There is nothing to indicate that delivery by the forceps has to be resorted to more often by the use of this method—rather the contrary. Considering the type of case under discussion, the number of forceps-deliveries—nine of the 78 cases—is comparatively small. These nine were effected by the low forceps operation.

The Additional Use of Pituitrin.

Even if it fails to initiate uterine contractions, I believe that quinine, given as described, brings about a certain amount of tone or uniform contractility in the uterine muscle itself. Pituitrin, if given when the uterine muscle is in this condition—that is, immediately after the course of quinine—is not so liable to produce the irregular and spasmodic contraction which has been known to cause rupture of the lower uterine segment. The first 19 cases of this series were induced with the additional use of pituitrin and without any untoward occurrence. The percentage of successes by this means, however (68·4 per cent.), was not even so high as that obtained by the use of quinine and castor oil alone (72·7 per cent.), and I believe it to be unsound to employ pituitrin in the first stage of labour. The latter 55 cases of this series were conducted without its use.

Pituitrin may be of assistance with negligible danger in the induction of abortion, when this is inevitable, and the uterus does not exceed the size of a five months' pregnancy. Especially is it useful to complete an inevitable abortion at anything up to three and a half months, the uterus then being unable to accommodate the smaller hydrostatic bags. From this stage to five months abortion lends itself to induction by a hydrostatic bag with greater success immediately following a course of quinine and pituitrin, as do later labours to bougies immediately after the quinine course alone.

The danger, therefore, of the production of irregular and spasmodic uterine contractions by the administration of pituitrin is minimised by the quinine course immediately preceding it. It is this fact which, I believe, makes its use legitimate in the production of complete abortion at the dangerous stage up to three and a half months, or even up to five months, when conditions are not favourable to uterine rupture during labour. In cases beyond this stage, however, pituitrin should never be used, as the production of anything but regular and uniform uterine contractions is both scientifically unsound and extremely dangerous, especially in the type of case which particularly lends itself to medicinal induction.

Conclusion.

The chief point to which I would draw attention is that labour was successfully induced by purely medicinal means in 57 out of 78 cases, or 73 per cent. These are divided into a small group of the earlier cases in which pituitrin was also used, and a larger group of later cases in which quinine and castor oil were alone used. It is interesting to note that the percentage of successes in the later group is larger than in the earlier cases. It would appear that the additional use of pituitrin in no wise increases the possibility of success—a further contra-indication to its use.

This high percentage of successful inductions by medicinal means assigns to this method its place in obstetrics. This percentage of successful cases is higher than that reported by Williamson [1] (46·6 per cent.) and Muschallik [2] (58·6 per cent.), but not so high as Watson [3] claims with the additional use of pituitrin (90 per cent.). He, however, only obtained 29·9 per cent. of successes with the quinine and castor oil alone. But the number of my cases is far too small to attempt a comparison of statistics. It is chiefly made up of cases presenting possible difficulties with regard to the progress of labour, whether the pelvis be normal or otherwise. It is this clinical use of medicinal induction rather than the actual effects of the drugs themselves that I desire to emphasise. As far as the latter goes the work of Williamson and Watson places the matter beyond doubt.

Williamson states that the noteworthy points about his successful cases were: (1) the patient was due or past due by dates; (2) the head was fixed or beginning to engage; (3) the cervix was partially or completely obliterated and the minor os would admit a finger.

In the series here reported there were many successes with premature cases, and in others in which the fœtal head was mobile and the cervix closed and not drawn up. From a survey of these it would appear, therefore, that quinine is definitely able to act upon a closed cervix—a point which Williamson apparently considers doubtful.

In conclusion, therefore, I would wish to emphasise the fact that in cases where induction of labour is indicated but where methods involving interference

[2] Muschallik: Monatschr. f. Geburtsh. u. Gynäk., Berlin, 1920, p. 378.
[3] Watson: Amer. Jour. of Obstet. and Gyn., December, 1922, p. 603.

per vaginam are contra-indicated, this treatment is definitely called for. Only in two of the series was Cæsarean section found necessary after labour induced by this means had been given a short trial, but without it how many would have been subjected to it, and in how many would the prognosis, after Cæsarean section, have become necessarily graver if mechanical attempts at induction of labour had previously been made?

Clinical and Laboratory Notes.

A CASE OF CORONARY EMBOLISM.

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A NUMBER of references have recently been made in THE LANCET to the clinical syndrome of thrombosis of the coronary arteries. Embolism of the coronaries is rarer than thrombosis, and the following note is of a case that I believe to have been embolism.

The Case Described.

On May 6th, 1925, a male patient, aged 55, underwent an operation for intestinal obstruction of a non-malignant nature. It was necessary to relieve the obstruction by temporary drainage of the cæcum. He was extremely ill for many weeks after the operation. On May 24th there were signs of consolidation at the right base and in the axilla. Later there were signs of fluid with displacement of the heart to the left. The fluid was deeply blood-stained and sterile. The pulmonary condition may have been infarction. He made good progress, and on Sept. 17th an operation was performed to close the cæcal fistula. The operation was only partly successful at first but eventually the opening into the intestine was shut off. He was comfortable and in good health until Oct. 1st.

On Oct. 2nd, at 3 A.M., he woke with a shout and a start. His head felt full, he had great pain across the chest, chiefly on the left side. The pain was described as tight and clutching. He became cold and clammy with a subnormal temperature. The cheeks were a dusky blue and he was a leaden grey about the mouth. The radial pulse was not palpable and it seemed as if he would die in a few minutes. This condition persisted with little change through the day. At 5 P.M. the pulse was just palpable at the wrist but was very rapid and irregular. The hands were cold and clammy and he was sweating profusely on the head and chest. There was still great pain in the left side of the chest. The mental state was clear but apprehensive.

On examining the chest I found the apex beat in the anterior axillary line 4½ inches from the mid-line. The cardiac dullness extended to the right of the sternum 2 inches from the mid-line. On auscultation there was a confusion of unrecognisable faint sounds but a distinct friction was heard in the third and fourth left interspaces close to the sternum and outwards for an inch. At 6 P.M. he was a better colour. The cardiac dullness was smaller and there was a resemblance in the heart sounds to a triple rhythm. Some beats did not produce a pulse at the wrist. The friction was not heard. At 8 P.M. the radial pulse was palpable and regular and had the characteristics of pulsus alternans, which persisted until 1 A.M. on Oct. 3rd. During the night he slept, became a better colour, and the sweating became less. He was out of pain. During sleep the pulse was regular and 120. Oct. 3rd: He had a good day and was comfortable though tired. He slept a good deal. At 6 P.M. the cardiac dullness was bounded by the left border of the sternum and the apex beat was 4 inches from the mid-line. The heart sounds were faint but audible and friction was again heard then and on the morning of the 4th, when he looked very much as he did before the attack though the pulse was 110 to 120. The temperature was subnormal for several days. The pulse remained rapid for ten days and then came down by degrees to 80.

He is now quite well, and as the wound is healed he is taking up his ordinary life once more.

Comment.

The points of interest are: (1) sudden onset; (2) nearness to death for several hours; (3) persistence of thoracic pain for many hours; (4) complete temporary destruction of the cardiac rhythm which passed through a phase of pulsus alternans before returning to a regular but rapid rhythm; (5) pericardial friction, which was audible on some occasions for three days. There was no breathlessness; the liver was not enlarged; the back of the chest was not examined.

It would seem likely that this was a case of embolism of a branch or the main channel of the descending division of the left coronary artery. Where did the embolic material come from? Was it from the left auricular appendix where thrombus had formed during his stay in bed? Or, bearing in mind that he probably had had previously a pulmonary embolus, may not an embolus from the abdominal wall have passed through a patent foramen ovale? I will not offer an answer to these questions, but am content to put on record a probable case of coronary embolism with recovery.

A CASE OF PNEUMOCOCCAL PERITONITIS.

RECOVERY WITHOUT OPERATION.

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AND

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THE following case appears to be an example of pneumococcal peritonitis recovering without operation.

G. N., a girl, aged 14, was admitted to the Royal Northern Hospital on March 3rd, 1925. On the previous day she had complained of general abdominal pain, and had vomited several times; the bowels had been constipated.

Previous Health.—In March, 1923, she was admitted to this hospital complaining of cough and pain in the right side of the abdomen of three days' duration. On admission, at the base of the right lung there were crepitations and broncho-vesicular breath sounds. The temperature was 101° F., the pulse-rate 100, and the respiration-rate 30. Three days later no abnormal physical signs could be found in the chest. There was slight tenderness in the right iliac fossa. She was discharged after two weeks, apparently in perfect health. No definite diagnosis was made, but it was thought to be either subacute appendicitis or mild pneumonia.

Present Attack.—On the day of admission the pain in the abdomen was more severe than on the previous day and there was slight cough. The abdomen moved well and no rigidity, but a general tenderness was present, perhaps most marked in the right lower quadrant. No other abnormal physical signs. The temperature was 99°, the pulse-rate 100, and the respiration-rate 25. On March 4th she was seen by a surgeon, who did not consider that appendicitis was present, and suggested that the condition was due to the lungs. The same evening the patient had a rigor; the temperature rose suddenly to 103°, the pulse-rate to 130, and the respiration-rate to 38. On the 5th she was transferred to the medical wards. She was still complaining of abdominal pain and there was slight cough but no expectoration. The face was flushed and the eyes bright, the conjunctivæ slightly injected. There was no rash. The tonsils were not enlarged or inflamed. No abnormal physical signs were found in heart, lungs, or nervous system. The abdomen was moderately distended but not tense. On palpation there was no muscular rigidity, but a general doughy sensation. The tenderness appeared general. Liver and spleen were not palpable. Blood culture, agglutination for the enteric group, and a blood count were performed on the 5th. The blood cultures were sterile. Agglutination was negative to *B. typhosus* and *B. paratyphosus* A and B in dilutions of from 1 in 25 to 1 in 250. The blood count showed 10,000 leucocytes per c.mm. with 73 per cent. of polymorphonuclear neutrophils and 2 per cent. of eosinophils. The cough ceased in the course of a few days and did not recur, and no abnormal physical signs developed in the lungs. Throughout the illness there was no complaint of headache, and no rash, cyanosis, glandular enlargement, or diarrhœa, and while under observation no vomiting.

The bowels were usually open once or twice a day with the aid of aperients.

From this time for nearly six weeks the patient became steadily worse. Temperature remained between 100° and 103°, moving irregularly; pulse between 100 and 130; respiration-rate about 25. On March 11th a second blood count showed an increasing polymorphonuclear leucocytosis, absence of eosinophils, and the presence of anæmia. The red cells numbered 4,300,000 per c.mm., and the hæmoglobin was 75 per cent. The leucocytes were 20,000 per c.mm., with 83 per cent. of polymorphonuclear neutrophils, and no eosinophils were seen. By the 20th the patient was profoundly ill and wasting rapidly. At night she was delirious, but was clearer during the day. She complained continually of abdominal pain, and occasionally acute attacks occurred for which she was given injections of morphine several times. A few rigors occurred at night. The abdomen was extremely tender on palpation. No local masses or tumours could be felt. The tip of the spleen was just palpable. On the 25th a blood count showed a rapid increase in the anæmia, increase in the polymorphonuclear leucocytosis, and a complete absence of eosinophils. The red cells numbered 3,200,000 per c.mm., and the hæmoglobin was 55 per cent. The leucocytes were 24,000 per c.mm. with 84 per cent. of polymorphonuclear neutrophils, and no eosinophils. By the 30th the wasting had become extreme and delirium was practically continuous. She still complained of severe abdominal pain and resented palpation. The abdomen was full but not tense, and the doughy sensation remained. The spleen was somewhat larger. There was no sweating. She was losing ground rapidly and now appeared certain to die. No satisfactory diagnosis had been made, but some form of tuberculosis was considered probable. From March 30th to April 3rd she appeared to be holding her own, and the temperature and pulse were lower. From April 3rd to 11th an exacerbation of abdominal pain occurred. The temperature rose to 104° and the pulse to 130, and the condition again appeared hopeless.

On April 11th a definite improvement occurred, and continued afterwards without intermission. By the 20th she was definitely better, mentally clear, and commencing to take food. The abdomen was still tender and the spleen just palpable. By the 30th the abdominal tenderness was very slight and the spleen was not palpable. Her weight was 5 st. 8 lb. The temperature had fallen to between 98° and 99°, and the pulse to between 100 and 110. By May 5th she was practically convalescent, though some slight abdominal tenderness remained and the abdomen was still somewhat distended and doughy. A blood count showed an improvement in the anæmia, a return of eosinophils, and a fall in the polymorphonuclear leucocytes with an absolute increase of lymphocytes. The red cells were 4,000,000 per c.mm., and the hæmoglobin 65 per cent. The leucocytes were 12,000 per c.mm. with 46 per cent of polymorphonuclear neutrophils, 43 per cent. of lymphocytes, and 3 per cent. of eosinophils.

On May 13th an agglutination test against the pneumococcus was made with the following result.

Serum.	1 in 2.	1 in 5.	1 in 10.	1 in 20.	Saline.	Type of Pn.
Patient ..	Trace	–	–	–	–	1
„ ..	–	–	–	–	–	2
„ ..	++	++	++	+	–	3
Control A ..	–	–	–	–	–	3
„ B ..	–	–	–	–	–	3
„ C ..	–	–	–	–	–	3

The patient's serum caused complete agglutination of type 3 pneumococcus at a dilution of 1 in 10, and agglutination without sedimentation at 1 in 20; type 1 was only slightly agglutinated at 1 in 2, and type 2 was not affected at any dilution. Three control sera were tried against the type 3 pneumococcus with negative results. In view of the low titres obtained in agglutination tests with pneumococci, the above result was regarded as positive for type 3 pneumococcus.

The patient's subsequent progress was an uninterrupted improvement. She was discharged from hospital on June 4th in satisfactory general condition. No abdominal tenderness remained, although the abdomen still appeared somewhat full. The weight had increased to 6 st. 12 lb.

Commentary.

The diagnosis was in doubt throughout the acute period. In the earlier stages the most likely conditions appeared to be appendicitis, pneumonia, and enteric. Against appendicitis was the complete absence of any rigidity in the abdomen and of localisation of the tenderness. No abnormal physical signs were found in the lungs throughout the attack. As the illness continued it no longer suggested typhoid fever. As the condition advanced and wasting became marked we were inclined to accept the diagnosis of some form of generalised tuberculosis, though without being satisfied by this explanation.

Unfortunately it was not until May 12th that the possibility of pneumococcal peritonitis occurred to us. The agglutination test then showed a definite reaction with type 3 strain of pneumococcus, while various controls had no effect. We have been unable to find a record of a similar case in which agglutination reactions have been performed. The patient returned to hospital on June 28th for observation and then appeared to have recovered completely.

HYPERÆSTHESIA IN DISEASE OF THE GALL-BLADDER.

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IN some observations on cutaneous hyperæsthesia in acute abdominal disease published in THE LANCET in 1924, I pointed out that in gall-bladder disease increased sensitiveness of the skin might be found either in the ninth segmental area or in the region just above Poupart's ligament on the right side of the body. At that time the comment was made: "It is quite conceivable that both the upper and the lower areas might be simultaneously involved in a case, but so far I have never seen such an occurrence." Since that time I have met with two cases which showed both areas of hyperæsthesia. Curiously enough, the first to show this interesting combination was a member of the medical profession.

Dr. X, aged 28, whom I saw in January, 1925, on account of severe pain in the right upper abdomen. He had recently had several such attacks, but the attack for which I saw him was more disabling than the others. There was tenderness and slight resistance in the right hypochondrium. On stroking the skin with a pin a very definite rectangular area of hyperæsthesia was found in the ninth segmental area above and to the right of the umbilicus, whilst another hypersensitive area was detected as a band about an inch and a half broad, stretching just above and along the whole length of the right Poupart's ligament. Diagnosis of cholecystitis with peritoneal irritation was confirmed at operation, when I removed a gall-bladder distended and in a state of subsiding inflammation. No gall-stones were present.

Areas of hyperæsthesia found in both cases described in the text.

The second case was seen at the Bolingbroke Hospital in August, 1925. A woman of middle age presented signs of inflammation in the right hypochondrium, and gave a history suggestive of biliary colic. She was slightly jaundiced. Examination showed two areas of hyperæsthesia almost exactly similar to those described above. Diagnosis of acute cholecystitis with gall-stones was confidently made and confirmed at operation. Six small gall-stones were found near the neck of the gall-bladder, which was in a state of subsiding inflammation.

In both of these cases the gall-bladder was removed and convalescence was uninterrupted.

Considering these two cases and others in which but one of the two areas were found to be involved, it appears reasonable to conclude that the simultaneous presence of these two areas of hyperæsthesia gives definite evidence of inflammation of the gall-bladder, accompanied by a certain amount of peritoneal irritation.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

COMBINED MEETING OF THE SECTIONS OF MEDICINE AND COMPARATIVE MEDICINE.

A COMBINED meeting of these Sections was held on Jan. 26th with Dr. HUGH THURSFIELD, the President of the Section of Medicine, in the chair, when a discussion took place on

HODGKIN'S DISEASE IN MAN AND ANIMALS.

Sir HUMPHRY ROLLESTON, who opened the discussion on behalf of the Section of Medicine, said that the disease was variously known as Hodgkin's lymphogranuloma, lymphadenoma, and lymphogranulomatosis. In 1865 Cohnheim applied to a condition in which the enlarged lymphatic glands had the histological structure seen in leukæmia, but the blood did not, the term aleukæmic leukæmia. A better term for this was aleukæmic lymphadenosis. Sir Humphry Rolleston favoured the use of the term Hodgkin's lymphogranuloma, as suggested by Prof. H. M. Turnbull. According to the returns of the Registrar-General, the disease seemed to be becoming commoner, for in the last ten years the deaths from it had risen from 280 to 371. The cause of the disease was unknown, and the only means of exactly defining what was meant by the name was a description of its histological structure. In fact, the diagnosis in a given case could be made only on microscopical characters. The response to radiant and other treatments could not be regarded as diagnostically conclusive. He recalled the main histological appearances, as independently described at about the same date by Prof. F. W. Andrewes and Miss Dorothy Reed—namely, (1) a diffuse alteration of the structural architecture of the glands as a whole, which showed (2) a diminished number of lymphocytes, (3) endothelial hyperplasia, (4) so-called lymphadenoma cells, and (5) in some cases well-marked eosinophilia. Often in the early stages there existed a leucopænia; while when the disease was widespread there was commonly a polymorphonuclear leucocytosis. Biopsies could not be regarded as free of fallacy, as the excised gland might show nothing more than an indefinite lymphoid hyperplasia, due either to inflammation, or as a process which was compensatory for the destruction of other lymphatic glands.

Nature of the Disease.

Three main views as to the nature of the disease had been advanced: that it was a neoplasm, a transition stage between neoplasm and inflammatory formation, or—the idea favoured by the speaker—an infective granuloma. The virus had been believed by various workers to be the tubercle bacillus, a Gram-positive pleomorphic diphtheroid bacillus, and a spirochæte, but Sir Humphry Rolleston considered none of these had been firmly proved to be the cause. He thought there were several reasons for looking upon Hodgkin's disease as a neoplasm, the chief being that in its early stage it was localised to existing lymphadenoid tissues, while at a later stage it invaded other non-lymphoid tissues and became generalised after the manner of a sarcoma. Also, in the late stages the histological features were, or might be, those of sarcoma, so that Ewing applied to it the term "Hodgkin's sarcoma." It was very difficult to decide whether the lymphogranuloma became transformed in its course into Hodgkin's sarcoma, or whether the condition was sarcomatous from the start and became more virulent as the resistance of the patient was lowered. Possibly a gland which was originally merely chronically inflamed became malignant later.

It was usually considered that the cervical glands were the primary site of lymphadenoma, as these glands had been said to be affected in from 50 to 76 per cent. of cases, though it did not follow that the glands first found to be enlarged were those first attacked. Based on the observation of 14 cases, Symmers stated that primary enlargement started in the abdominal or in the abdominal and thoracic glands ten times more often than in the cervical, and Ewing confirmed this. This matter of the starting-point was important because of determining in what area irradiation should be applied. Curiously, Hodgkin's disease very rarely attacked the lymphoid tissue of the alimentary canal.

Is the Disease Transmitted to Animals?

There appeared to be a lack of satisfactory evidence that Hodgkin's disease had ever been transmitted to animals, but Bunting and Yates, after repeated injections of the diphtheroid bacillus they isolated from lymphadenomatous glands into five Macacus rhesus monkeys, found in the latter appearances like those of the early changes of Hodgkin's disease as seen in man; this was a somewhat ambiguous finding as Bunting stated that the early stage of that disease resembled inflammation. Hodgkin's disease had been said to occur in the so-called lower animals, but Sir Humphry Rolleston asked how far this statement was based on clinical evidence and how far on the revelations of the microscope. The few recorded cases that he had come across could more correctly be named lymphoma. There seemed no reason why Hodgkin's disease should not occur in animals, but more information was needed as to the microscopic appearance in supposed instances.

Diagnosis.

The greatest difficulty in the differential diagnosis of Hodgkin's disease was its clinical separation from the primary sarcomata of lymphoid tissue. In many cases there was no other means than by the microscopical examination of an excised gland. Cases of secondary malignant growth in the cervical and supraclavicular glands might imitate Hodgkin's disease when the primary growth in the mediastinum or œsophagus was latent and there had been no skiagram. There were three clinical forms of tuberculous adenitis which must be considered in the diagnosis from lymphadenoma; the first was common, the second very rare, and the third very exceptional. The first of these, tuberculous glands in the neck, often simulated early lymphadenoma, especially when the glands showed tuberculous large-celled hyperplasia without necrosis or caseation. Secondly, generalised tuberculous adenitis might be accompanied by relapsing fever such as had been described as accompanying lymphadenoma. When this form of adenitis occurred it might be associated with visceral infection. The third condition, but little seen in this country, was an adenolipomatosis, in which fatty growth occurred around lymphatic glands that might be tuberculous.

Lymphadenitis in Animals.

Prof. G. H. WOOLDRIDGE, speaking as a veterinarian, said that Hodgkin's disease was occasionally diagnosed in the lower animals, but he was sometimes in doubt as to the true nature of the disease so described. He believed the condition was infective and that it was a lymphadenitis, the causal organism having a low degree of virulence, and the effect being produced on the lymphatic glands, at first slowly. It was not due to the tubercle bacillus. In the cases about which he felt no doubt the condition had become well advanced before he saw the animal. There had been a gradual onset, accompanied by a hacking cough, and the pharyngeal glands were swollen and slightly painful. Often the appetite was well maintained until the disease was advanced, though there was a distinct loss of general bodily condition. Sometimes there were fainting fits. A constant feature was an almost universal enlargement of the abdominal glands. But the results of histological examination were dis-

appointing. The blood showed no appreciable alteration in the number or the types of the leucocytes present. Though the spleen was considerably enlarged, it was of normal consistence, while the enlarged lymphatic glands showed only lymphoid hyperplasia. Up to the present time he had been disappointed in the result of treatment; the disease had been fatal in adult dogs in his hands, but he had had some success with young dogs. Prolonged exertion and excitement should be avoided, and the food should consist of meat, eggs, and milk; and cod-liver oil, extract of malt, and syrup of hypophosphites should be given. He had no experience of X ray or radium treatment; very few owners would go to that expense. He spoke also of a somewhat similar condition in sheep, known as caseous lymphadenitis, due to a Gram-positive diphtheroid bacillus. Usually it was seen only in the course of meat inspection, not during life, and the joint might be on the table before the lesion was seen!

Clinical Features of Hodgkin's Disease.

Dr. H. MORLEY FLETCHER spoke mainly on the clinical features of the disease, which he thought was most likely of infective origin. The frequent occurrence in these cases of periodic fever was difficult to account for except on the assumption of an infective agent, probably a spirochæte, and this was supported by its behaviour under the administration of arsenic. It had been suggested that the pyrexia was due to the absorption of products from the glands; and the possibility of associated tuberculosis should always be borne in mind. He had usually found in the condition a polymorphonuclear leucocytosis of 10,000 to 14,000. The careful recording of minimum temperatures revealed the same type of chart as that associated with the name Pel-Ebstein. The abdominal manifestation of Hodgkin's disease might be latent, hence great difficulty might be experienced in diagnosing it. The result of X ray and arsenical treatment he had found to be striking, but the enlargement of thoracic and abdominal glands was liable to recur in a short time. He had not received encouraging results from the use of antimony.

Mr. L. P. PUGH said Hodgkin's disease was only one of a group of conditions in animals which showed a more or less generalised incidence on the reticulo-endothelial system, all being likewise characterised by some enlargement of the lymph glands, the liver, and spleen. These conditions were probably fatal, therefore a gland was not removed for histological examination. He considered that the leukæmias were due to spirochætes, and that this might also be true of Hodgkin's disease.

Experimental Work.

Prof. M. J. STEWART (Leeds) described the inoculation experiments which were done by Dr. J. F. Dobson and himself on monkeys, injecting material from a succulent gland in a proved case of human Hodgkin's disease. In the first series pieces of gland were injected into the spleen and mesenteric lymph glands; in the second series an emulsion of Hodgkin glands was injected intravenously. A result in the first series was a striking hyperplasia of the lymph glands and of the lymphoid follicles of the spleen; in the ileo-colic angle there was a chronic abscess with giant cells round about it. He regarded this as a foreign body reaction. In another case he found a small nematode in the pus, and there the foreign body reaction was stimulated by the presence of that parasite. The net result, in regard to the production of Hodgkin's disease, was negative. The evidence in favour of Hodgkin's disease being a granulomatous formation was very strong, and he believed a considerable proportion of cases ended with a condition indistinguishable from malignant disease. He gave an analysis of the findings in 460 cases in which glands were sent to his department for examination, and from the figures emphasised the great difficulty of diagnosing Hodgkin's disease clinically.

Mr. W. HORNER ANDREWS, speaking as a veterinarian, said his contribution to the discussion must be on the negative side, as, taking the histological changes as the criterion, he was not aware of a single case of Hodgkin's disease in lower animals. The condition which had been usually so regarded was one in which there was a general enlargement of lymphatic glands, usually associated with splenic enlargement, but not any leukæmia, and in which no bacterial cause, such as tubercle, could be demonstrated.

SECTION OF UROLOGY.

A MEETING of this Section was held on Jan. 28th, Mr. R. H. JOCELYN SWAN, the President, being in the chair, when Mr. GIRLING BALL opened an informal discussion on

PYELOGRAPHY.

He said that he used a large record syringe with a fine-bored needle and a solution of sodium bromide, or at times sodium iodide. He showed pyelograms of three cases:—

1. A man from Penang, complaining of renal colic without other symptoms, who produced 11 radiograms taken in all parts of the world and showing no evidence of calculus. The pyelogram showed typical early hydronephrosis with calculus. After the fluid had drained out a round shadow was left which proved to be the outline of a pure uric acid calculus, some of the opaque material having remained attached to it.

2. A girl of 19, with a chronic pain in the loin which incapacitated her for work. X rays showed shadows which were said to be calcareous lymph glands. The pyelogram showed the typical distension of the calyces associated with stone. When the kidney was removed 20 calculi were found in it.

3. A case showing the symptoms of renal disease and hæmaturia, diagnosed as calculus. A stereoscopic pyelogram showed that the shadow lay in front of the kidney; it proved to be a large mass of calcareous glands in the mesentery.

Mr. T. E. HAMMOND pointed out that the solution injected was of very high concentration and 12 per cent. sodium iodide might produce a severe reaction in the kidney. Possibly this was an idiosyncrasy to the drug; in one such case he had seen 10 gr. of iodide given by the mouth thrice daily produce iodism in two days. On account of this danger the pelvis should be washed out as soon as possible. Patients might also complain of irritation of the bladder after it had been washed out with oxycyanide of mercury; possibly this was due to the formation of sodium mercury iodide and might be obviated by the use of sodium chloride instead of oxycyanide. He showed slides illustrating a case of acute abdominal pain with a large tumour on the left side of the abdomen but no tenderness or rigidity, diagnosed as perforated gastric ulcer. The pyelogram showed no filling defect but a kink in the ureter. A tentative diagnosis was made of torsion of the spleen. At operation a large tumour of the kidney was found, and three months later the patient was admitted to hospital for intestinal obstruction. The pain was possibly due to hæmorrhage into the tumour. Another case, a woman of 40, had had pain on the left side for five years. A catheter would not pass into the kidney, but fluid injected led to pain similar to that she complained of. Pyelography showed a kink in the ureter. Under anæsthesia the catheter passed into the pelvis and was left for 12 hours. Since then there had been no symptoms. In another case of renal colic of five years' standing with bleeding from the left ureter, a No. 8 catheter failed to pass an obstruction 8 cm. up; a No. 7 passed into the pelvis, and the picture showed a dilatation of the ureter above the pelvic brim. At operation an abnormal uterine artery was found compressing the ureter above the pelvic brim, and there was a small uric acid stone.

Mr. ALBAN ANDREWS showed pictures of three cases:—

1. A man of 32 with congenital cystic kidneys; he had had hæmaturia from the left kidney for a week and one or two similar attacks during the preceding six months. Both kidneys were palpable, but the left was larger and more irregular.

2. A youth of 20 who had had one attack of pain in the right loin four months before being seen. There were no other symptoms except occasional cloudiness of the urine, thirst, and attacks of flushing and swelling under the eyes. Tests of function were quite satisfactory on the left but poor on the right. At operation adhesions were found between the ureter and the lower pole of the kidney with kinking.

The PRESIDENT remarked that Mr. Andrews had come up against the usual difficulty—the diagnosis between polycystic kidney and malignant disease.

Sir JOHN THOMSON-WALKER said that it was necessary to be careful about diagnosing disease on elongated calyces, which might produce no symptoms at all.

Mr. GILBERT SCOTT pointed out how important interpretation was and how difficult it was to decide whether any abnormality seen in the pyelogram was a variety of the normal or a pathological condition. Slight variations such as a partly filled pelvis might be due to faulty technique. He found it useful when in doubt to imagine that it was his own kidney on which he was pronouncing judgment. Technique should be as simple as possible; the whole process should be completed within half an hour. The catheter should be passed in the room in which the photograph was taken and three plates should be exposed—one before the injection; one when the pelvis was full, taken at full inspiration; and the third while the kidney was emptying, at full expiration. The two latter gave an idea of whether the kidney was fixed or not. The third picture might give evidence of a stone which the second did not show. A shadow was more likely to be thrown around the stone by sodium bromide than by collargol. A lateral view failed when it was most wanted for localisation of shadows in the kidney region; a far better method of localisation was to take two pictures, one in full inspiration and one in full expiration, noting whether the shadow moved with the kidney in all directions. He showed a number of cases:—

1. Of double ureter and pelvis on both sides with a hypernephroma of the lower pole on one side, the lower pelvis not functioning at all.
2. A slide showing the opaque substance trickling through into the tubules; it caused no ill-effects; some kidneys took the stain very easily.
3. A pyelogram showing variations of normal (*a*) very slender calyces, and (*b*) a number of small calyces.
4. Early hydronephrosis, with no blunting of the calyces, which did not show till very late in the condition, but revealed itself by increased breadth of the calyces and increased size of the pelvis.
5. Elongated calyces in a case of hypernephroma of the upper pole.
6. A similar hypernephroma showing the lower calyces dilated while the upper had disappeared altogether.
7. A similar disappearance of the upper calyces in what proved to be a benign papilloma.
8. A large calcareous growth which was never diagnosed.

In the last four cases a real diagnosis was very difficult; the great thing was to realise that a pathological condition was present.

Sir JOHN THOMSON-WALKER pointed out certain characteristics of the normal pelvis. The catheter should pass into the upper calyx, otherwise it raised the roof of the pelvis, which usually meant a displaced or abnormal kidney. In the normal pyelogram it was not possible to tell exactly where the pelvis ended and the ureter began. There was a certain curve between the upper ureter, the lower pelvis, and the lower calyx; in the abnormal kidney this curve became diminished or angular in proportion to the dilatation or displacement.

Mr. SWIFT JOLY showed a series of slides:—

1. A case with indefinite shadow in the lower pole after nephropexy. There were no primary calyces; all were of the secondary type.
2. A doubtful shadow which proved to be a bifurcation of the ureter.
3. A patient who had had a nephrolithotomy and showed a repetition of the symptoms. X rays gave an indefinite shadow, but the pyelogram showed that this was in connexion with the colon, and it proved to be a mass of tuberculous glands.
4. A small stone in both ureters on the level of the lower pole. The picture showed the ureter still dilated five months after operation.
5. A case of double ureter.
6. Three patients with hæmaturia, with very few localising signs, diagnosed by pyelography as hypernephromata.
7. A case of renal tumour with marked distortion of the ureter and dilatation of the lower calyx.
8. A ureter drawn out into a wide curve, possibly due to immobility of the kidney.
9. A huge embryoma.
10. The kidney of a doctor from West Africa, who had had a series of boils since last August with pus in the urine. His condition progressed almost to a septicæmia, and when examined he proved to have a large fixed kidney and an irregular temperature about 102° F. The pyelogram showed an abscess opening into the middle calyx with elongation of the upper calyx.
11. A case of polycystic disease in a boy of 15.
12. A tuberculous kidney.
13. Extreme rotation of a kidney with abnormal renal artery.
14. Rotation with an abnormal artery passing through the upper pole and producing symptoms which were relieved by division of the vessel.
15. Two cases three years after nephropexy, showing the kidney dropped again with kinking of ureter.
16. An oxygen pyelogram of hydronephrosis, which had been operated on as a mesenteric cyst.
17. A large hydronephrosis in one-half of a horse-shoe kidney which the pyelogram failed to diagnose.
18. A case suspected of being a horse-shoe kidney but shown by pyelogram to be two separate organs with the right one rotated and the seat of malignant new growth.

Mr. F. MCG. LOUGHNANE said he had had a number of cases of mobile kidney with no marked symptoms save, occasionally, frequency of micturition or painful micturition, or slight right-sided abdominal pain. All had shown a definite hydronephrosis on pyelography. He showed slides of two such cases of pain in the right iliac fossa, one of which was taken four years after appendicectomy. Injection of sodium iodide in each case caused the characteristic pain. He also showed a slide of perirenal oxygen inflation, showing the right kidney swivelled round the spine, and another showing hydronephrosis 15 years after nephropexy.

Mr. H. C. GAGE said that sodium iodide not stronger than 7–10 per cent. gave a thin but very good picture. With a stronger concentration the technique must be changed and the tension raised to 70,000 or 80,000 volts to get the necessary penetration and show any umbilication of the ends of the calyces. Otherwise blunting might appear where it did not really exist. A picture taken at the end of deep inspiration showed a deformation of the ureter and gave a false impression. Of great importance was the control of the patient; if he was very nervous he should be asked to breathe deeply through the nose. Breathing rapidly through the open mouth would assist in cases where pain was produced, and the patient could be asked to take small breaths or to stop breathing altogether while the picture was taken. There should be a preliminary examination before the pyelography if possible. He demonstrated a slide to show that pyelography with the patient in the vertical position was quite possible.

Mr. A. CLIFFORD MORSON said that correct interpretation was very difficult and required close coöperation between radiologist and urologist. The clinical picture was as valuable as the radiogram, and the pain produced by fluid injection should be compared with the pain the patient complained of. He always used sodium iodide from 15–25 per cent., and had given up the use of antiseptic with it, owing to the irritation caused by oxycyanide of mercury. He showed slides illustrating three cases:—

1. Case of painless hæmaturia. Pyelogram showed one kidney normal with distended calyces and the other with something protruding on the inner side of the pelvis; this proved to be a squamous carcinoma.
2. A case of stony hard swelling in the left loin with a shadow over the iliac crest. The pyelogram was not of much help; it showed a little stunting of the lower calyces. Operation revealed a very large hydatid cyst of the lower pole, with calcified wall.

3. A case of painless hæmaturia in a boy of 17 with both kidneys palpable. Pyelography showed an abnormal bifid pelvis with elongated calyces, probably a congenital cystic condition.

Prof. E. B. FULLER (Cape Town) said that very valuable information about mobility was obtained by screening the kidney before the injection and watching the fluid go in and the way the pelvis distended. This also gave the best position for centring the photograph.

Mr. C. NITCH asked for an opinion on a case of a girl of 10 with colon bacilluria of six months' duration, and retention. Daily catheterisation had reduced the retention to 8 oz. residual urine. The bladder was inflamed and the neck œdematous and congested. Only 15 c.cm. of sodium bromide would pass in; it showed hydronephrosis on one side. Pyelography under anæsthesia showed that the opposite kidney was normal, as it was in function. If the condition was primarily in the bladder, why was the dilatation on one side only?

Mr. MORSON described similar cases in which unilateral congenital hydronephrosis was associated with occult spina bifida. He explained the one-sidedness by a faulty innervation of the bladder neck, so that one ureter gave way before the other.

The PRESIDENT said that he had found, working with Dr. R. Knox, that 10–12 per cent. sodium iodide gave the same density as sodium bromide, but he had used the latter extensively and satisfactorily. He used 12 per cent. sodium bromide when working with a small renal pelvis, but if he suspected dilatation he used up to 25 or 30 per cent. solutions, because of the difficulty of emptying a large pelvis and the resulting dilution of the injection fluid with urine. He took the first picture when 10 c.cm. had been injected, and if there was then no pain he injected up to 20 c.cm. He showed slides illustrating:—

1. A shadow thought to be a stone. Pyelography showed dilatation of the ureter due to spasm and the dilated calyx above the stone.
2. A large number of small stones in the kidney of a young child.
3. A case of hydronephrosis and dilated ureter with stone.
4. A boy with a stone in each ureter.
5. A stone in the ureter with large destruction of the kidney.
6. A case with attacks of renal colic; the X rays showed nothing, but pyelography revealed a marked kinking of the ureter, probably due to an aberrant artery. He had since learned to disregard kinks; often, as in this case, nothing was found at operation.
7. A case of hydronephrosis where the catheter would only pass in 2 in., but the injection was successful.
8. A case of severe pain in the left side with enlarged kidney and tortuous ureter. At operation the kidney was found to be slightly displaced by tuberculous glands.
9. A case of right-sided swelling with frequency of micturition and normal pyelogram. The swelling was a right lobe of the liver, and the frequency was due to a uterine fibroid.
10. A case that looked like pelvic hydronephrosis; the catheter would not pass up. A year later the condition was a renal hydronephrosis and the catheter was passed satisfactorily.
11. An incomplete filling of a large hydronephrosis which gave a picture like a new growth.
12. A fat patient with hæmaturia from the left kidney. Pyelography showed a flattened top to the pelvis which looked like a growth but was really due simply to flabbiness of the kidney.
13. A horse-shoe kidney, showing the characteristic tail on the inner side of the calyx.
14. A case of polycystic kidney with long calyces.

Mr. WINSBURY WHITE showed slides illustrating:—

1. Marked looping of the ureter with distension of the pelvis. The urine could not be got out, although the catheter passed a normal distance. He wondered whether it was justifiable to run in a fluid, knowing, as in this case, that it could not be extracted.
2. Two cases where the catheter passed up to 30 cm. but no urine drained out. The indigo-carmine test indicated hydronephrosis, and the kidney was removed without pyelography. He did not think pyelography should be done on such cases; the diagnosis was simple without.
3. A case of ureteral stricture with attacks of pain on the left side similar to that of hydronephrosis. The catheter would not pass up in this case either, but the thickened ureter could be palpated.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

MATERNITY AND CHILD WELFARE GROUP.

A MEETING of this Group was held on Jan. 21st, when Dr. HAROLD SCURFIELD, the Vice-President, took the chair. He referred to the death in December last of Dr. R. Woolsey Stocks, the President, and deplored the loss which the Group had suffered. A resolution of condolence was passed.

Dr. REGINALD JEWESBURY (St. Thomas's Hospital and Truby King Institute) then opened a discussion on

The Use of Cream in Infant Feeding.

Fat, he said, was one of the most difficult and important constituents of the infant's diet, and nearly all prepared infant foods were deficient in it. The fat chosen might be natural cream or some other fat. Natural cream possessed the disadvantage of uncertain composition, depending on whether it was separated or centrifugalised cream, besides having all the ordinary disadvantages associated with cow's milk. He had found emulsified fats more satisfactory in use, and recommended a 50 per cent. emulsion containing cod-liver oil. The introduction of such a fat must in all cases be gradual. New Zealand cream was an example of such an emulsion. It was made from a recipe carefully compounded by the director of infant welfare in New Zealand, and was intended for use throughout that country. It was manufactured in a New Zealand Government factory, and Dr. Jewesbury had found it most satisfactory in use, readily assimilable, and sterile. It kept indefinitely, contained the vitamin intact, and had the high caloric value of 180 per oz. The composition was 50 per cent. fat, two-thirds of this being animal oil, including fresh New Zealand butter and cod-liver oil, and one-third vegetable oil, mainly pea-nut oil; 40 per cent. sugars, mainly dextrose; and a little lactose. The addition of the pea-nut oil was found of great assistance in promoting the digestibility of the animal oils. Whether this particular cream appealed to people or not, he strongly advocated the use of some such product of uniform content in infant welfare work throughout the country.

Dr. E. A. BARTON (University College Hospital) reminded his hearers that the digestibility of fats was very variable and was in inverse ratio to their melting points. Although human and cow's cream seemed comparable in this respect, in practice the infant had difficulty at first in taking a milk mixture containing cream in similar proportion to breast milk. He believed that artificial creams should only be used when clean cow's cream was unobtainable, as it was in poor districts during the war. Accordingly he had endeavoured to design a synthetic cream which would be cheap, clean, and readily assimilable, and which, in contrast to Dr. Eric Pritchard's early synthetic cream which he had previously used, would contain the fat-soluble vitamin A. With help from Dr. C. H. Hampshire a cream had been derived from the emulsification of beef suet, and this they had found readily tolerated by infants. Beef suet had a higher melting point and its digestibility was less than that of butter fat, but only to the extent of about 4 per cent. The fat content was 25 per cent.

Dr. DONALD PATERSON (Great Ormond-street and Infants Hospital) said that he believed synthetic creams to be an unnecessary complication of ordinary cod-liver oil emulsions. He thought that people erred in exaggerating the chances of too little fat being given, and stated that the curds in infant stools were nearly always fat curds. Cases suffering from this condition were typically the cases that developed summer diarrhœa. The fat tolerance of the infant was easily overstepped, and as fat was slow in leaving the stomach it was often, if given in excess, a cause of vomiting when the next feed was given. The vitamin content of ordinary cream varied greatly and was liable to be deficient in winter. He believed in giving all children

cod-liver oil for its vitamin content, and this was done at Great Ormond-street. The psychology of the mother was a factor influencing the child's tolerance of fat. He advised giving cod-liver oil before instead of after three of the daily feeds.

Dr. J. F. HAINES (assistant medical officer, St. Pancras) described the process of fat digestion in some detail, and stated that while the fine state of emulsification of fat in breast milk contributed to its ready digestion by the infant, it was possible that each kind of fat required its own enzyme, and that foreign fats given to the infant suffered on this account. Everyone agreed that it was necessary to approximate as nearly as possible to breast milk in composition and in ratio of constituents, and he thought that for this reason milk fat in the form of cream or butter was better than any vegetable or other animal fat. He had tried many synthetic creams, but for years now had advised the addition of fresh butter to infant feeds in a poor district where expense and simplicity had to be considered. His results had been extremely satisfactory. The percentages were easily calculated; one-quarter of a teaspoonful of butter in a 3 oz. feed raised the percentage of fat by 1. Where good cream was obtainable he found the old formula approximating to breast milk excellent. The important point was to introduce fat into the feeds slowly and gradually, remembering the infant's tendency to intolerance; if necessary alkalis and biliary stimulants should be given as well. Cod-liver oil given in a similar manner was the best substitute for milk fat.

Dr. W. J. COX (medical officer of health, Watford) gave some results of administering Vitoleum cream, and Dr. FLORA SHEPHERD dealt with the possibility of infection from cow's cream or butter.—Dr. MARGARET ALDEN quoted a series of letters from various medical officers to whom she had written asking for information regarding their practice in the use of fats. Cod-liver oil seemed to be the fat in general favour.—Many other members also took part in the discussion, in closing which the CHAIRMAN referred to the pasteurisation which is, or used to be, the natural procedure in the making of Devonshire cream and Devonshire butter. It was decided to appoint a subcommittee on cream to report to the National League for Health, Maternity and Child Welfare in due course.

JAMES MACKENZIE INSTITUTE FOR CLINICAL RESEARCH, ST. ANDREWS.

AT a meeting held on Jan. 26th Dr. A. HYND gave a lecture-demonstration on the

Estimation of Blood-sugar.

In introducing the subject the lecturer referred to the various processes which tend to keep the sugar content of the blood within normal limits. As the estimation of blood-sugar is carried out to throw light on the behaviour of one or other of these processes, the results can be of value only when the processes other than that under investigation are maintained at a constant level of activity. It was then pointed out that, as the glucose present in the blood exists in the free state and not combined with colloids, the sugar is not precipitated on deproteinisation. Also as, under normal conditions, the sugar contents of the corpuscles and plasma of human blood approximate to each other closely, there is no advantage in using plasma rather than whole blood for the determination. Consequently, the estimation can be carried out on a much smaller quantity of blood than would be necessary if it were essential to employ plasma.

Dr. Hynd indicated that the estimation of blood-sugar may be subdivided into two parts: (1) the removal of protein, and (2) the determination of the sugar content of the protein-free filtrate. The various methods for deproteinising blood were reviewed, and the fact that so many methods have been devised for this purpose indicates that the removal of protein from blood, in such a way that the subsequent sugar estimation is not interfered with, is no easy matter. The methods for the determination of the sugar content of the protein-free blood filtrate all depended on the reducing property of glucose, and were either colorimetric or volumetric processes. Although the former are much more rapidly carried out, and can be employed advantageously when a large number of estimations must be made, they are not so reliable as the volumetric methods. Of these the most useful for clinical work are the methods devised by Hagedorn and Jensen and by MacLean.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

A MEETING of this Section was held on Jan. 15th with Mr. R. C. B. MAUNSELL, the President, in the chair.

Double Vestibulotomy.

Dr. HORACE LAW and Dr. GEOFFREY BEWLEY showed a patient on whom Dr. Law had performed this operation.

She was a girl aged 7 years who developed acute suppuration of the left middle ear on Nov. 27th. This appeared to progress favourably, but a week from the onset she complained of headache and nausea and had some convulsions. A tentative diagnosis of meningitis was made, but the cerebrospinal fluid was found to be clear and sterile though under considerable pressure. Shortly afterwards her pupils became unequal, the left being dilated; there was nystagmus to the right, and the eyes tended to deviate to the same side. Her knee-jerks were equal and normal; there was no ankle clonus and no Babinski's sign. Double vestibulotomy was done, and in a few hours the nystagmus, which before had been to the right, changed to the left; the pupils became equal and the temperature fell to normal. Subsequently the child did not develop any signs of giddiness, and she is now practically well.

Dr. Bewley said that before the operation the child was in a moribund state, and he thought that she would not have lived more than a few hours.

Foreign Body in the Brain.

Sir WILLIAM WHEELER exhibited a patient, aged 21, who was wounded in the head in May, 1921.

During some street fighting he received what was then thought to be a small scalp wound to the right of and above the occipital protuberance. He was not detained in hospital. At the time of his wound he noticed music in his ears, as if there was a band with drums in the locality. A fortnight later he was smoking a cigarette when he noticed a black dot in his right lateral field of vision. The speck moved medially, growing larger and becoming brighter until it appeared as a blinding light in the centre of his visual field. At this stage he became totally blind. He never lost consciousness but his memory was stimulated, and he saw men firing at him and believed that he was surrounded by some of his companions. The attack was followed by headache and vomiting. These attacks lasted about 20 minutes and recurred once or twice a month for four years. There was no olfactory disturbance. In the intervals he was well, but the constant appearance of the black spot made him mentally morbid.

The results of clinical examinations were entirely negative; there was no paralysis, motor or sensory; there were no alterations in the reflexes, and both fundi were normal. The fields of vision was not accurately examined before operation. X ray examinations disclosed that the nickel case of part of a conical bullet was lying in the base of the brain, just behind the petrous portion of the temporal bone at the level of the eminence in the superior semicircular canal. To approach the bullet in a direct line it would have been necessary to open the skull behind the vertical line, dividing the mastoid into equal parts. The direct route would have led through the sigmoid portion of the lateral sinus and some of the posterior branches of the middle meningeal artery. The skull was opened at a level above the location of the bullet, and when the meninges were divided a finger was passed under the temporal lobe in front of the cerebellum. After some difficulty a feeling of resistance was detected with the finger, and with the latter in situ a forceps was pushed through the temporal lobe in its direction. A mass about the size of an olive could now be located and was enucleated. There appeared to be a line of cleavage between the mass and the brain substance. On removal the tumour proved to be a mass of fibrous tissue incapsulating the conical point of the bullet. Before it could be extracted it became necessary to nibble away bone towards the base of the skull and the sigmoid portion of the lateral sinus was

wounded. Control of the bleeding was not difficult. During the removal some brain matter on the lateral surface of the temporal lobe was injured and removed. In bulk the brain matter sacrificed was about the size of the tumour. At the close of the operation the bone was not replaced and no osteoplastic flap was made.

The after-history was uneventful, and a month after the operation the patient appeared quite well. He had no recurrence of his previous attacks.

It appeared that the area involved in this case was the association area which lay between the visual area behind and the portion of the brain to do with hearing, in front, and it was interesting, said Sir William Wheeler, to correlate these findings with the clinical history given by the patient. The three main points in the history were: the sounds of band music on the day he was wounded; the distorted visual phenomena occurring on an average twice a month for over four years; and the memory, during each attack, of troops firing at him and the feeling of being surrounded by his friends. He surmised that the association centre in the brain from which the foreign body was extracted was one of the habitats of the intellect which brought to memory hearing and sight. He ventured to think that it was the development of such a centre—absent at birth and in the lower animals—which accounted (inter alia) for the fact that Beethoven could write and conduct his symphonies at a time when he was totally deaf.

Sir William Wheeler also read a paper on a case of Colonic Infantilism.

SECTION OF PATHOLOGY.

A MEETING of this Section was held on Jan. 8th with Prof. J. W. BIGGER, the President, in the chair.

DR. J. LAIT exhibited three specimens of

Hypernephroma.

These tumours, he said, were not commonly met with, though they formed a high proportion of renal new growths. He had encountered three cases in three months, which he considered unusual; two were removed by operation and one was discovered at an autopsy. Hypernephromata most commonly occurred between the ages of 35 and 60. One of the specimens had been removed from a boy aged 15, but the disease was rare in childhood.

The first specimen was removed from a woman aged 38, who had complained of painless hæmaturia for some months. The tumour was palpable and hypernephroma was diagnosed. At the operation the tumour was found to have extensively invaded the renal vein which was ligated and removed with the kidney. The specimen was a typical hypernephroma.

The second specimen was from a boy aged 15. He had been suffering from hæmaturia off and on for 12 months. On Oct. 1st, 1925, he injured his side in falling, and this was followed by considerable hæmaturia. During cystoscopy gentle pressure over the affected side was followed by profuse hæmorrhage from the corresponding ureter. The tumour was not palpable. It was removed by operation. The kidney was slightly enlarged, with subcapsular hæmorrhages and several calcified nodules over its lower pole. The pelvis was distended and apparently filled with blood clot. An incision was made into the kidney and a tumour was found occupying the lower half of the organ and invading the pelvis, causing its distension. It was very hæmorrhagic. Microscopic examination revealed an epithelial tumour formation, hypernephromatous in type. Sections also showed numerous small calcified nodules, cancellous bone, and much hæmorrhage.

The third specimen was discovered at a post-mortem examination in a woman aged 50. The tumour was the size of a fœtal head and there was practically no kidney substance left. The renal vein was involved. There were metastases in the lungs and liver, but the spleen was not involved.

Discussing the ætiology of hypernephroma, Dr. Lait asked whether it was usual to find cartilage and bone, as in the second case. Was the tumour correctly named? He believed that many of these tumours had a renal origin.

Tumour of the Humerus.

DR. F. S. BOURKE showed a specimen from a patient aged 34.

He was admitted to hospital in May, 1925, with a swelling of the elbow of two months' duration. At first it was thought to be tuberculous, and an incision was made. Dr. Bourke had considered that the tumour was an endothelioma, but Prof. Wigham, who had made a paraffin section, had said that he thought it was a cancer, the primary growth being probably in the thyroid or in the prostate. The man was examined very carefully, but no primary focus was found. In June the arm was removed, because it was thought that the tumour was an endothelioma and there was the possibility that it was merely a local growth. The patient remained in hospital until September, when the upper part of the right thigh began to swell and another tumour was found there. He was given deep X ray treatment, but gradually went downhill and developed secondaries all over the body. In October he developed bladder obstruction and an operation was done. It was found that the obstruction was from the prostate. Before the operation the patient said that six months previously he had had a hæmorrhage from the bladder, which he had not mentioned until then.

DR. W. D. O'KELLY said that from the original section it would have been very hard to diagnose cancer, though the second section was full of it.

At the same meeting DR. O'KELLY showed an economical lamp-holder for microscopical work, and DR. M. M. MERRICK read a paper on the Bacteriological Findings in Vaginal Discharges, based on the results of a series of cases investigated by her and Dr. D. W. Douglas in the Coombe Hospital.

SECTION OF ANATOMY AND PHYSIOLOGY.

A MEETING of this Section was held on Jan. 22nd, at which Dr. C. M. WEST, the President, made a communication on Hypospadias, and Dr. W. R. FEARON demonstrated a new Colour Test for Indoxyl and a

Simple Clinical Test for Bile.

The bile-test he proposed is as follows: to 5 c.cm. of urine add an equal volume of glacial acetic acid and 1 drop of Milton. The presence of bile is shown by the development of a deep green colour, which changes to dark blue and then to purple on the addition of another drop or two of Milton. In character, he said, the test was similar to the Gmelin-Hammarsten reaction, involving the conversion of the pigment bilirubin into a series of coloured oxidation derivatives. Of these the blue compound, bilicyanin, was the most intense, and its recognition determined the delicacy of the test. The glacial acetic acid liberated the bilirubin, and acted as a solvent for the pigments. In the absence of Milton (a proprietary preparation of sodium hypochlorite) other oxidising agents might be used, such as 3 per cent. hydrogen peroxide, followed by gentle warming. But the results obtained with Milton were much more delicate. The test would detect 1 part of bilirubin in 100,000 parts of urine, thus comparing favourably with the other direct tests for bile.[1]

BUXTON MEDICAL RESEARCH SOCIETY.

AT a meeting of this Society held at the Devonshire Hospital, Buxton, on Jan. 12th, Dr. J. A. RYLE (London) delivered an address on

Hyperpiesia.

After a tribute to the late Sir Clifford Allbutt for his work in delimiting hyperpiesia from renal and other forms of hyperpiesis on the one hand, and from senile or decrescent atheroma on the other, Dr. Ryle suggested that although it was interesting to speculate on the existence and nature of a pressor substance, it was at present more profitable to bear in mind certain known ætiological factors. We should not neglect older methods of clinical study in our eagerness to unearth specific causal agents. He regarded bacterial and intestinal toxins as unlikely factors, partly because most of these toxins have a depressor rather than a pressor effect, and partly because the majority of hyperpietic patients have been robust and healthy individuals with a striking immunity from infection. Diathesis was of particular importance in hyperpiesia. It had long been recognised that hyperpiesia was more common in robust

[1] Hammarsten, O., 1913: Physiologischen Chemie, 8th ed., Chap. 7.

individuals, and that there was frequently a family history of deaths from cerebral hæmorrhage or cardiac defeat in the fifth and sixth decades. An analysis of 50 cases of hyperpiesia which he had made had given the following results: 62 per cent. of the patients were recorded as robust, healthy, stout, plethoric, or hypersthenic; 18 per cent. as average; 14 per cent. as of poor physique; and 6 per cent. as lean and nervous. The outstanding characters of the hypersthenic diathesis were a full habit, a broad chest, a good colour, and a pronounced tonicity of both skeletal and plain muscle. The stomach was hypertonic and the appetite and capacity for work were exaggerated. Diathesis could be defined as an inherent liability to retain the impress of certain adverse stimuli. Patients with a physiological hypertonus of vascular plain muscle were more likely to retain permanently the effects of such stimuli as overwork, over-eating, and over-anxiety, which were known to raise the blood pressure. Infections only appeared to play an important part in the small group described as of poor physique and in a few of the group called average. The high incidence of the female cases—54 per cent. as compared with 46 per cent. of males in his series—was probably due to the inclusion of cases of menopausal hyperpiesia. After discussing therapeutic measures such as alteration in mode of life, holidays, dietary, weight-reduction, venesection, and diathermy, Dr. Ryle suggested a plan for prophylaxis based on the popularisation of periodic physical examinations after the fourth decade, attention to family history and physical type, and the systematic use of the sphygmomanometer.

LIVERPOOL MEDICAL INSTITUTION.

A PATHOLOGICAL meeting was held on Jan. 21st, when Mr. K. W. MONSARRAT read a paper on the

Ætiology of Chronic Gastric and Duodenal Ulceration.

He reviewed the evidence on the question of infection, mentioning the work of Bolton, Türck, Dawson, Rosenow, and others. He then passed to the consideration of the rôle played by alterations in the gastric chemistry, and argued that such alterations could not be considered the chief agency in the production of chronic ulcer. In the third place he reviewed the work of Cannon, Carlson, Rogers, and others on disorders of gastric rhythm and tonus. He drew the following conclusions from his review of the subject:—

1. There is no satisfactory evidence that chronic gastric and duodenal ulceration is primarily due to direct invasion of the stomach or duodenal wall by specific organisms.
2. Chronic gastric and duodenal ulceration is not caused by alterations in the chemistry of the gastric secretions.
3. The evidence available points to alteration in gastric rhythm being the primary morbid condition which, when persistent, leads to the development of ulceration.
4. The site of the ulceration is the site of maximum impact of gastric contents, whose normal neutralisation has been interfered with by the altered gastric rhythm.
5. The gastric secretions, innocuous to the stomach wall under normal conditions, cause irritation and eventual ulceration when the gastric rhythm is altered; trophic changes may also prepare the way for this action.
6. The fundamental condition on which these morbid changes in gastric motility and rhythm depend is doubtless a disorder of gastric innervation, which may have its origin in toxic influences or psychic influences, or in reflex influences from disease elsewhere. The innervation of the stomach is not, however, so completely analysed as to make it possible to say whether these influences bear on an autonomic gastric system, or whether they affect the stomach by way of the vagus or sympathetic. There is, however, some evidence that in the gastric type which is usually associated with duodenal ulceration there is some inhibition of impulses by the splanchnic path, and that in the gastric type which is usually associated with gastric ulceration it is the vagus impulse which is depressed.

Mr. Monsarrat pointed out that there were many questions still unsettled, particularly in regard to the part played by infection, by alterations in the gastric secretion, and by influence through the nervous system.

Reviews and Notices of Books.

FORENSIC MEDICINE AND TOXICOLOGY.

Buchanan's Text-book of Forensic Medicine and Toxicology. Ninth edition. Revised by JOHN E. W. MACFALL, M.D., D.P.H. Liverp., M.B., Ch.B. Vict., Ph.C., Professor in Forensic Medicine and Toxicology, University of Liverpool. Edinburgh: E. and S. Livingstone. 1925. Pp. 445. 15*s.*

THIS work was formerly known as Husband's Forensic Medicine and it included public health. The eighth edition, brought out by Dr. R. J. M. Buchanan, dealt only with forensic medicine, the public health section being published separately. The present (ninth) edition is entrusted to Dr. MacFall.

The first section dealing with forensic medicine is clearly and concisely written, with much material arranged in tabular form, and is profusely illustrated. The tables of measurement of structures make use of the unfamiliar unit of "lines"—e.g., 2 inches 8 lines. A line (one-twelfth of an inch) is a convenient term, but so rarely employed as perhaps to require explanation. The chapter on blood stains is complete and accurate with one exception. This is the italicised statement that the guaiacum test "reacts to no coloured substance except blood." If this were so, there would be no need for other tests except those determining the species from which the blood was derived. Insulin poisoning, producing hypoglycæmia, might have been included in the differential diagnosis of states of coma.

In the second section which deals with toxicology the author has attempted to put much matter in a small space, with the result that analytical details suffer. The difficulty of condensing such details is obvious, but the reader may be led into serious error, when he attempts to perform tests suitable for pure substances on viscera, medicines, or remains of poison in glasses, unless he receives the fullest guidance in the methods of isolation of the suspected substance in a state of purity. Objection is taken by the author to the Reinsch test owing to the danger of impure hydrochloric acid or copper, whereas in discussing Marsh's process this question is dismissed by stating that absolute purity of reagents must be ensured. The Marsh test is much more delicate than the Reinsch test, therefore the purity of reagents is far more important. In practice purity of reagents is a continual worry when the Marsh test is being used, whereas with the Reinsch test, using ordinary "arsenic-free" reagents, there is seldom need for anxiety. In this connexion it is surprising to find no mention of the electrolytic process for Marsh's method. The analysis of material containing sulphuric acid is unsatisfactory and difficult to understand. If the details were followed as here given, deduction from results would not be correct, if indeed any result was obtained at all. The iodic acid test for morphine is incompletely set out, and the most important test for cocaine—namely, the permanganate test—is not among the six tests described. Poisoning by muriatic acid is stated to be so rare that the symptoms have not been well studied. Yet in the Registrar-General's reports for 1921-23, 240 deaths are given as due to hydrochloric acid and only 20 for both nitric and sulphuric acid.

Students and practitioners will find the parts of the book which are of chief interest to them—those dealing with symptoms, post-mortem appearances, and treatment—reliable, and as detailed as possible in a work of this size. The index is good and misprints are few.

ON THE PANEL.

By a Panel Doctor. With a Preface by C. M. WILSON. London: Faber and Gwyer, Ltd. (The Scientific Press). 1926. Pp. 294. 6*s.*

THIS is a useful little book recording the experience on the panel side of practice in a country town. The author and his partner are responsible for 2500 panel

patients, and the various chapters give a simple and candid account of what they do and how they do it, of what are their difficulties and how they surmount them, indicating at the same time many places where a better public understanding of insurance practice will automatically remove situations that are now embarrassing. The young practitioner may be warmly advised to read the first eight chapters, though this is not to suggest that he will not learn much that is useful from the rest of the work. But the earlier part of the book is full of practical advice to the man starting in practice as to the right methods of dealing with the insured man and woman—methods which necessitate the cultivation of a real sympathy with the general position as well as with the individual temperament of panel patients. Although the author nowhere says it in words, he is considering throughout the situation of a man who is in partnership, and so consistently is his advice coloured by a knowledge of the value and advantages of partnership, that he may be said to imply that the only reasonable method of entering upon panel practice for the young man is in association with a senior of assured position.

In dealing at the end of the book with the question of a State Medical Service the author reaches the conclusion that no adequate scheme for such a service, or for a greatly extended insurance scheme, is likely to be other than extremely expensive; and he demonstrates, along lines that are mostly familiar, that to spend a great deal of money in the institution of a State Medical Service would be to spend it badly, if only because the valued right of the patient to choose his own doctor would necessarily go. He sets out fairly the arguments in favour of the socialistic plan, such as removal of the doctor's anxiety with regard to financial position, the possibility of starting without capital expenditure, and the more even distribution of doctors in accordance with the density of the population, but counters them with the opinion that the loss to the patient of the free choice of doctor is fatal to the scheme.

LIFE OF FLORENCE NIGHTINGALE.

By Sir EDWARD COOK; Abridged and revised by ROSALIND NASH. London: Macmillan and Co. 1925. Pp. 404. 15*s*.

Sir Edward Cook had intended to write a "Short Life of Florence Nightingale" as a pendant to his monumental work in two volumes reviewed in THE LANCET in 1913 (ii., 1483). His death prevented the carrying out of this project, but Miss Nash has produced an admirable abridgement of the larger work together with some fresh matter, details of which will be found in the preface. The fact that the medical services of the Navy and Army during the Great War were the subject of universal admiration was in great part due to the initiative and passionate energy of Florence Nightingale during and after the Crimean War, a period of her life which by its dramatic incidents and its awakening effects upon the national conscience rather overshadows her admirable social services. Still her work in the Crimea and what followed as a corollary, the reorganisation of the War Office with the aid of Sidney Herbert, were events of outstanding importance. When the Crimean War broke out we were so unprepared that the fuses for the shells of the first battering train sent out had been in store since Waterloo and there were not enough shells fully to furnish it. The medical arrangements were beyond contempt, and no wonder when the Director-General of the Medical Department in London was under five distinct masters—the Commander-in-Chief, the Secretary of State, the Secretary of War, the Master-General of Ordinance, and the Board of Ordinance. There is a passage in Livy (Bk. II., 57) which *mutatis mutandis* exactly describes the situation: "While the tribunes and the consuls each tried to bring everything under their respective authority there was no central unity of command, the nation was distracted and torn in two, and the thing sought for appeared to be rather in whose hands power should be, than that its safety should be preserved." The Government, with the exception of Herbert, most of the medical officers at the front, the old soldiers, the camp and port authorities, were all afraid or unwilling to move. Into this blood-stained welter of ignorance and officialism Florence Nightingale came to reduce the chaos to order; how she did it is known to all the world. Afterwards she continued her work, to the lasting benefit of hospitals and public health throughout the world.

FRACTURES AND DISLOCATIONS.

Treatment of Fractures and Dislocations in General Practice. Second edition. By C. MAX PAGE, D.S.O., M.S. Lond., F.R.C.S., Senior Surgeon to Out-patients, St. Thomas's Hospital, &c.; and W. ROWLEY BRISTOW, M.B., B.S. Lond., F.R.C.S., Surgeon to the Orthopædic Department, St. Thomas's Hospital. London: Humphrey Milford, Oxford University Press. 1925. With 148 figures in the text. Pp. xiii.+279. 12*s*. 6*d*.

TWO years ago (THE LANCET, 1923, ii., 1355) we welcomed the first edition of this book, for which we predicted a popular success with surgeons as well as with the practitioners for whom it was primarily designed. The title has been altered to include dislocations; the additional matter certainly increases the value of the book, of which the price remains unchanged. Some figures have been withdrawn, but more have been added. The new chapter on dislocations in general contains much sound advice, and the sections devoted to dislocations in the chapters dealing with the various bones should be of great utility. The classical but rough-and-ready method of reduction of a dislocated shoulder by the heel in the axilla has fallen out of use and the authors of this book teach that it should never be employed. The method favoured is essentially that of Kocher. Other dislocations are shortly but adequately dealt with. This little book should receive a permanent place among modern surgical handbooks.

JOURNALS.

JOURNAL OF PATHOLOGY AND BACTERIOLOGY. Vol. XXIX., No. 1. Pp. 1–139. January, 1926.—The Identification of the So-called *B. mycoides corallinus* as a Streptothrix, by Vera B. Reader (London). Some particulars of the pigment and its spectrum are also given.—The Production of Experimental Endocarditis with Pneumococci and Streptococci in Immunised Animals, by H. D. Wright (London). Endocarditis can be produced in specifically immunised animals, and in some cases a progressively increasing septicæmia with marked antibody production has been seen such as occurs in subacute infective endocarditis in man, but the conditions which determine the occurrence of this state have not been determined.—Inhibition of Bacterial Growth by Some Amino-acids and its Bearing on the Use of Tryptic Digests as Culture Media, by J. Gordon and J. W. McLeod (Leeds). Some amino-acids (e.g., taurine, alanine) favour growth, some (e.g., cystine, tryptophane) are inhibitory, and some (e.g., arginine, tyrosine) are indifferent. Indol is a powerful antiseptic, and tryptophane probably owes its action to this. Serum protects bacteria against amino-acids and must be added to tryptic digest media to make them efficient.—A Laboratory Epidemic in Rats due to Gaertner's Bacillus, by N. D. Ball and C. Price-Jones (London). A running epidemic had killed 19 rats out of 602 in the course of 12 months. The whole rat population of the animal house, consisting of apparently healthy animals, was then killed and examined; Gaertner's bacillus was isolated from the spleen of 13, three of which also gave positive agglutinations; 15 others agglutinated without yielding the bacillus.—Immunological Notes, by A. T. Glenny, C. G. Pope, Hilda Waddington, and U. Wallace (London). The precipitate obtained in the Ramon testing of toxin-antitoxin mixtures is actively

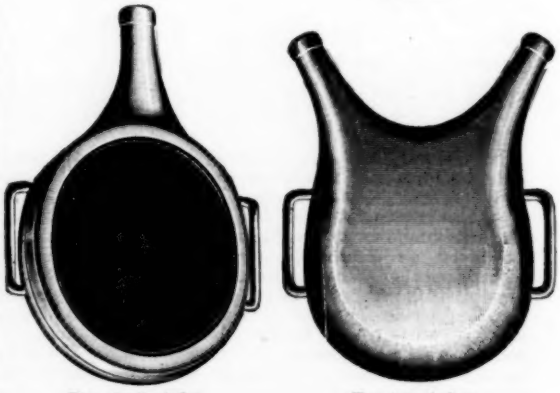
antigenic. Toxin containing 0·5 per cent. phenol is more easily destroyed by heat than uncarbolised toxin, and the same is true, but to a less degree, of trikresol. Carbolised toxin-antitoxin mixtures may become toxic on evaporation because the phenol destroys antitoxin faster than toxin. Formaldehyde, 0·2 per cent., rapidly reduces the antitoxic value of serum. Toxin or toxoid precipitated with potash alum has a high antigenic value. Toxoids which fail to flocculate in Ramon tests may be good antigens.—Chordoma: a Review with Report of a New Sacrococcygeal Case, by M. J. Stewart and J. E. Morin (Leeds). A useful and comprehensive account of this rare tumour.—A Sacrococcygeal Chordoma, by W. A. Alexander and J. W. Struthers (Edinburgh). These papers were reviewed at some length in THE LANCET last week (p. 248).—On the So-called Calcification in the Basal Ganglia of the Brain, by E. W. Hurst. Deposits which stain blue-black with ordinary hæmatoxylin mixtures are fairly common in the lenticular nucleus either in the walls of the blood-vessels or as isolated spherical bodies in the tissues; the author found the former 50 times and the latter 68 times in 100 brains. They have been generally supposed to represent calcification, but neither the author nor anyone else has been able to produce definite evidence of this. All the vascular deposits and most of the isolated bodies contain abundant inorganic iron, connected with the high iron content of the globus pallidus.—Experiments on the Influence of Fatigue on Infection, by A. E. Boycott and C. Price-Jones (London). Exhaustion in a rotating drum has no influence on the mortality of rats inoculated with Gaertner's bacillus, but markedly increases illness and deaths in animals infected by feeding. Repeated exhaustion does not break down the resistance of the rat to tubercle. Fatigue is accompanied by a fall of body temperature to 85° F., or even lower.—The Nature of the Movements of the Omentum, by H. Florey and H. M. Carleton (Cambridge and Oxford). The omentum is incapable of moving itself. It is passively moved about the abdomen by posture, peristalsis of the bowels, and diaphragmatic movements.—The Action of Extracts of Mesenteric Lymph Glands on Leucocytes, by R. H. Mole (Moukden). Extracts of the glands of a spleenless rabbit cause leucocytosis in spleenless rabbits, but not in normal animals.—The Number of Lymphoid Follicles of the Human Large Intestine, by C. E. Dukes and H. J. R. Bussey. The authors enumerated the follicles in 117 cases by a simple technique. The average number per square centimetre is about 3½ with a range of about 1 to 7. Children have more than adults, and there is an increase of 30 per cent. in passing from the ascending colon to the sigmoid.—Alum Carmine for Counterstaining Weigert-Pal Preparations, by J. Anderson (London).—Dissecting Diverticula of the Appendix, by J. A. Jenkins (Dunedin). A curious condition of which the author has seen six examples.—Staphylococci and Rheumatoid Arthritis, by H. W. Crowe (Harrogate). In two cases of rheumatoid arthritis cultures of staphylococci were obtained from the tissues about the joints obtained at operation.—Immunisation against *B. welchii*, by T. Dalling and J. H. Mason (London). The toxin and antitoxin can be accurately titrated by intravenous injection in mice. Active immunisation of sheep protects their lambs from a diarrhœal disease associated with the bacillus.—Vaccine Treatment of Canine Leptospiral Jaundice, by T. Dalling and C. C. Okell (London). A sterile carbolised emulsion of the liver of infected guinea-pigs is an effective vaccine for dogs against "the yellows."—Hæmagglutination by Horse Serum and Jaundice in Mice, by C. C. Okell and G. I. Steed (London). Some samples of horse serum agglutinate mouse red cells and on intravenous injection cause severe anæmia, jaundice, and death.—Combined Schick Test and Diphtheria Prophylactic: Combined Diphtheria-scarlet-fever Prophylactic, by A. T. Glenny and Hilda Waddington (London). A mixture of toxin, toxoid, and antitoxin can be prepared which contains the same amount of toxin as a Schick-testing dose and has at the same time enough toxoid to replace the first immunising dose of toxin-antitoxin mixture. This saves time and trouble. Scarlet fever streptococcus toxin may be added to toxin-antitoxin mixtures in considerable amount without reducing the efficacy of the latter; it is hoped by such mixtures to immunise against scarlet fever and diphtheria simultaneously.—Some Points Regarding the Nutrition of *B. typhosus* and *B. coli*, by A. Piney (London).—Attenuation of Tubercle Bacilli extending over a Period of Nineteen Years, by N. Raw (London). Human, bovine, and avian strains have become non-pathogenic.—Carcinoid Tumour of Appendix with Large Pelvic Deposits, by M. J. Stewart and A. L. Taylor (Leeds). Carcinoid tumours probably arise from the specialised cells of the crypts of Lieberkühn known as Kultschitzky's cells; they are the commonest form of tumour of the appendix, occur mostly in relatively young subjects, and rarely metastasise. In the present case two masses were removed from the pelvis as well as the appendix with the primary tumour and the patient is alive and well ten years later.—Carcinoid Tumour of Meckel's Diverticulum, by M. J. Stewart and A. L. Taylor (Leeds).

New Inventions.

A STETHOSCOPE FOR RECORDING BLOOD PRESSURE.

THIS stethoscope differs from others in the fact that it is set at right angles to those in ordinary use, This has many advantages as it obviates the former necessity of standing straight in front of the part to be auscultated and so avoids the necessity of undressing. Also it avoids the disturbance of bed

FIG. 1. FIG. 2.



For single tube. For two tubes.

patients, who are in pain, or who must lie on their backs, as the backs of the lungs can be examined whilst in that position. The heart may be examined whilst the patient lies face downwards and so is in close apposition to the chest wall. The new model is provided with side fixtures to enable one to fix it in situ for use with the sphygmometer in recording blood pressure, for which purpose it is especially suitable. It may be used either with or without a diaphragm. These chest-pieces are made single and double. The single is joined to the binaural frame with a Y-shaped fitting. I prefer to use the single as it is readily manipulated and has less friction sounds, whilst it conveys the required sounds as well as any other stethoscope. The illustrations show the two forms.

These chest-pieces can be had from all medical instrument manufacturers.

W. C. MINCHIN, M.D.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 6, 1926.

THE OUTLOOK OF THE INSURANCE MEDICAL SERVICE.

WHAT changes are likely to occur in the Insurance Medical Service is a question which naturally arises at the commencement of each year when contracts are being renewed. This year, however, marking time becomes necessary while the Royal Commission prepares its report. Its inquiry has been of a very exhaustive nature, and as may be seen from the summary on p. 302 of the last public sitting before the Commission began to consider its report, the number of questions put and answered exceeded 24,800 and the published minutes include 107 appendices of evidence handed in for publication. It would serve no purpose to try to anticipate the findings of the Commission, though in many directions our readers would find it not a difficult task; but certain facts stand out from the mass of evidence submitted. On the one hand, there is the claim of the friendly and other approved societies for greater autonomy, and, on the other, a strong case has been put forward by various reformers for the abolition of approved societies as such. The societies themselves contend that it is owing to their efficient management that surplus funds have reached large dimensions, and they claim the exercise of greater freedom in the administration of additional benefits. By some societies this freedom has already been assumed in a direction not intended, as Sir WALTER KINNEAR has pointed out, by the legislature, which in permitting donations from accumulative funds to "charitable institutions" had in mind hospitals and dispensaries on a voluntary basis and not organisations set up purely for national health insurance. Many witnesses have advocated a State-administered national scheme in which the administration and supervision of all benefits should be under the Ministry of Health, working in association with local health authorities. Agreement seems general that the insurance committees are doomed. Their duties, as Sir WILLIAM GLYN-JONES admits, have gradually diminished and form now almost solely a routine.

In the present economic position of the country it is easy to predict that there will be little enthusiasm on the part of the Exchequer to finance a really comprehensive scheme of insurance. A large group of employers set out before the Commission their view that the cost of the various social services is already more than organised industry can bear, and that it is a matter of speculation whether such expenditure is repaid by greater efficiency and contentment among the workers. And yet, as the *Times* remarked a few days ago, "There can be little doubt that failure to provide complete health insurance must soon be tantamount to the neglect of a substantial business opportunity." If this system of health insurance is to include, in the words of the same article, "the provision of all and every resource which the sciences of medicine and surgery are capable of affording," then the finances of the present system must be remodelled. It would not seem to be an impossible task for the surplus and accumulated funds to be made available for urgent and necessary extensions of the service. This would, of course, involve legislation, but amendment of the Insurance Acts is rendered the more urgent by the risk of diversion in some other direction of these surplus funds. When, in the course of Poor-law reform, now contemplated by the Ministry of Health, the county councils come to exercise general supervision over the local health services as a whole, the time may well be opportune for some linking up of the insurance services with hospital provision and nursing facilities, both of which are urgently needed by insured persons. The final Scottish evidence before the Commission made it appear that an extra 3*s*. per annum per insured person would cover extension of services to include aids to diagnosis, second opinions, and hospital benefit.

The Commission has worked long and faithfully, and when its report is presented a heavy responsibility will rest on any legislature which fails to see that its recommendations are not promptly dealt with. They will necessarily be numerous, and some will be drastic; these facts will not excuse procrastination, as they have on other occasions when Royal Commissions have reported upon matters of national health.

SAFETY IN RADIOLOGICAL WORK.

SOME publicity has been given to the action of the authorities at the Coventry and Warwickshire Hospital in giving the contract for new X ray apparatus to Germany instead of to the British makers on the ground that, owing to the British methods of protection adopted, the apparatus was much more costly; it was also said to be more cumbrous in action than the apparatus purchasable from, and commonly used, in Germany. The published accounts of this action by the authorities of the hospital concerned may well be correct, and we do not think that the facts concerning the apparatus are seriously in dispute. It would be surprising if British X ray apparatus did not cost appreciably more than German, in view of the much greater importance attached in this country to the question of protection of the operators.

In this country a very important step forward was taken when in 1921 an X Ray and Radium Protection Committee was appointed, under the chairmanship of Sir HUMPHRY ROLLESTON, with the duty of formulating and detailing measures of safety for those engaged in this potentially dangerous work. Their first report was quickly followed by another, amplified in the light of newer knowledge, upon the harmful effects of the radiations. This action was followed by other countries, and it may be said that the measures of precaution recommended by France, America, and the Scandinavian countries show that just as serious a view is taken abroad of the consequences of repeated doses of radiations as was taken here. We believe that the standards of safety adopted in Germany are not so rigorous and, as a result, there is no doubt that some German X ray apparatus is much more lightly built and is probably quicker in action than that which finds official acceptance here. The question that now arises is, are authorities whose duties involve the spending of money often subscribed voluntarily by the public, justified in placing orders in Germany for such apparatus on these grounds? Sometimes it is necessary to go to other countries for radiological apparatus, but no such necessity arises here. We are convinced that the British recommendations are the minimum consistent with safety to the operator, and we would urge upon

the authorities concerned a reconsideration of their decision. Even on the lowest grounds, it might be suggested that if they pay less for the apparatus in the first instance, because it is not so well protected as the British apparatus, they may in years to come have to pay compensation for harm imposed upon those who use the apparatus. Moreover, no organisation which is established for the purpose of healing the sick can be justified in economies which might expose their staff to avoidable dangers. The Protection Committee of this country has had the great advantage of working intimately with the National Physical Laboratory on this subject. The laboratory not only issues certificates upon parts or complete sets of apparatus stating whether the requirements of the Protection Committee are being met, but the staff are able to send experts to inspect installations under actual working conditions.

The fact that personal inspection by the National Physical Laboratory has extended to over a hundred centres speaks well for the way in which the aims of the Protection Committee are being met throughout the country. Far from the recommendations made by them meeting with opposition, there is ample evidence to show that nearly everywhere authorities are anxious to adopt them. Those concerned with the administration of the Coventry and Warwickshire Hospital are, as far as we know, exceptional in the attitude they have adopted, and it remains to be seen whether their subscribers will approve of it. It must be admitted that no absolute guarantee of safety to those engaged in radiological work can be secured by any apparatus, but a strict adherence to the general lines of safety recommended in this country has gone a long way to lessen risks, and the advice of the Protection Committee should, we think, be adopted even if it involves increased outlay.

THE VIRUS OF FOOT-AND-MOUTH DISEASE.

IT is doubtful whether any ailment, not even excepting cancer and tuberculosis, has been more frequently mentioned in the public press during the last few years than foot-and-mouth disease. But for the most part newspapers have been content to record its outbreak, to enumerate the head of cattle destroyed, and to estimate periodically the cost of this scourge to the country. There has been no great campaign against official methods, no general demand that the scientific resources of the country should be mobilised to stamp out what is a very serious state of affairs. For this respite the Ministry of Agriculture may be thankful, for there seems a likelihood that when the public begin to inquire what steps are being taken to study the disease scientifically, some progress will already have been made. A long step in the right direction was taken when the official ban against the private study of foot-and-mouth disease was raised to a limited degree, and one of the first results of this more liberal policy appears in the December number of the *Journal of Comparative Pathology and Therapeutics*, where Dr. J. H. Arkwright, Dr. M. Burbury, Dr. S. P. Bedson, and Dr. H. B. Maitland record the results of work carried out by them at the Lister Institute.

The report is divided into two sections. The first section deals with the transmission of foot-and-mouth disease to rodents. The authors have confirmed the observations of continental workers that this disease can be easily and regularly transmitted to guinea-pigs, and have studied the main features of the disease in these animals in some detail. Transmission is usually effected by intracutaneous inoculation of the sole of the hind foot with diluted vesicle fluid, but intramuscular, subcutaneous, intracardiac, and intraperitoneal inoculations are also successful. The virus is also contained in the epithelium covering the vesicles—indeed, this was the source of the viruses used in these investigations; and the blood of animals in the early stages of the disease, as well as the oral secretions, are also infective. In guinea-pigs manifestations of the disease and the resulting immunity appear to be sufficiently clear-cut to make these animals reliable indicators of the presence or absence of an active virus, a matter of the first importance in the study of filterable viruses. Attempts to transmit the disease to rats and mice have been less successful, and it seems probable that the guinea-pig will remain the experimental animal of choice. Certain results which have been obtained in these investigations are rather startling in view of the extreme infectivity of the disease as it occurs among stock. No instance of spontaneous transmission from an infected to a susceptible guinea-pig was observed, though every opportunity was given for such a spread to take place. And though the blood of infected guinea-pigs contains the virus at certain periods of the disease, transmission by bugs from one animal to another has not been achieved. The second section of the paper contains a detailed account of the investigation made on the virus itself; all attempts at its cultivation have so far failed, and the authors find in their work confirmation of the unfavourable report of the recent German commission on the claims of Frosch and Dahmen to have succeeded in this matter. Many interesting observations have been made, however, on the survival of the virus in vitro under various conditions. It is found that survival is best at low temperatures, but in certain media it remains active at 37° C. for several days, and it is reasonably suggested that a careful study of these media may successfully pave the way to cultivation. The reaction of the medium appears to be of the highest importance, the optimum pH being 7·5–7·6, but, on the other hand, the virus seems to have a considerable degree of resistance to such agents as phenol, alcohol, and chloroform. Vesicle fluid, diluted 1 in 50 with saline, was shaken with chloroform in a stoppered bottle and then allowed to stand at room temperature in the dark for 176 hours, when it was still found to be infective.

The observations here briefly referred to appear to be of great interest and importance; the investigation is being carried out in a manner which augurs well for success, and it is not unreasonable to hope that a reproach to scientific medicine, by no means in this country alone, may soon cease to be justified.

THE NATURE OF MIGRAINE.

THE paroxysmal nervous headache known as migraine or "sick headache" is one of the most widespread and familiar of minor ailments. It is responsible for a great deal of suffering and loss of time, for it completely incapacitates its victims for periods varying from one to three days and is extremely painful. Probably because it is never fatal it has no known pathology, and practitioners who encounter it are reduced to tiding it over with palliatives and reassurance. To realise how vague an entity it is one has only to turn to a first-class work of reference. Osler mentions four out of the many theories of its causation: first, that it is a symptom of a toxæmia caused by bowel indigestion, uric acid, or some self-manufactured poison; secondly, that it is a vasomotor affection; thirdly, it is caused by the reflex action of some irritation such as a refractive error or troubles in the nose or sexual organs; fourthly, that it is due to a transient plugging of the foramen

of Monro with increased pressure in the ventricles. It appears early in life and its attacks are precipitated by powerful emotion, fatigue of mind or body, digestive disturbances, or the ingestion of some particular kind of food. It has a fairly definite syndrome, and its premonitory signs are well marked; the patient sees apparitions of mice or dogs, or suffers from hemianopia or scotoma. Sometimes the hallucination takes the form of a fortification, brilliantly illuminated and coloured, and sometimes simply of zigzag lines or balls of light. Numbness, cramp, and psychic disturbances also accompany it. The headache begins as a localised spot on the temple, forehead, or eyeball, and spreads over one side of the head and sometimes to the neck and arm. It is generally unilateral, but may affect both sides. Vomiting is common and often gives relief. A recent German publication[1] includes it in the same classification with a group of conditions which, though they differ widely in their appearance, nevertheless have a great deal in common. Under the heading of "exudative paroxysms" are gathered together Czerny's diathesis, Quincke's œdema, brain œdemata, acute œdema of the mucous membranes, urticaria, asthma, epilepsy, colica mucosa, and dysmenorrhœa. While most of these, if not all, can be caused by organic brain lesions and toxæmias, such as those that attend diabetes and nephritis, their syndromes in a large number of the patients seem to be "idiopathic"—i.e., they exist because of some unknown constitutional peculiarity. This predisposition is often inherited, and the sufferers nearly all have a personal or family history of mental or nervous disorder of some kind, but a large proportion are almost certainly due to sensitivity to foreign proteins, and it may be that where no neuropathic history is discoverable the patient will be found to have developed an anaphylaxis to one or more common proteins early in life. Sir Maurice Craig,[2] in a paper on the importance of protein hypersensitivity in a special group of epileptics, mentions that this is the cause of much migraine, and his skin-tests, which proved so valuable in detecting the offending proteins in epileptics, have been successfully applied to patients of the minor condition. Both ailments have disappeared when the offending substance was removed from the diet. As might be expected, migraine is common in conjunction with other complaints of this group. Vining[3] and others have written on migraine in combination with epilepsy, and Flatau[4] has declined to regard it as an entity, but holds that it is a symptom-complex that is only developed from a gouty diathesis. Dr. Bolten agrees with this view to the extent that he will not limit the causation to gout, but maintains that the reaction may occur in any neuro-toxic diathesis. He states that one of the symptoms of "genuine" migraine is always an œdema of the skin, as well as œdema of the cerebral membrane (probably also of the ependyma and tela chorioidea) and the lining of the stomach. The root-cause is some deficiency in the accelerating secretions, which gives the other normal secretions a toxic effect. The vasomotor paroxysm is a defence-mechanism to get rid of these toxins, which are excreted into the skin and mucous membranes and finally vomited or sweated. Nevertheless it hardly seems just to draw a hard-and-fast line between the migraine that has its origin in endocrine disturbance and the vasomotor reaction that is caused by reflex stimulation, exogenous toxæmia, emotional disturbance, fatigue or protein sensitivity, where there is no œdema and where the endocrine disturbance is probably a symptom and not a cause. It appears more likely that the headache and vomiting are, like epilepsy and other conditions, a reflex nervous reaction that can be produced by any cause that stimulates the sympathetic centres, whether toxic, nervous, or psychic.

[1] Über Genese und Behandlung der Exsudativen Paroxysmen: Dr. G. C. Bolten. S. Karger, Berlin, 1925.
[2] THE LANCET, 1923, i., 741.
[3] THE LANCET, 1922, i., 122.
[4] Lewandowski's Handbuch, Bd. v.. S. 342–426.

Annotations.

"Ne quid nimis."

THE NURSING SERVICE IN MENTAL HOSPITALS.

THE Board of Control has had under consideration the Report of the Departmental Committee on Nursing together with the report of the proceedings of a conference which took place in London last April when the nursing service in mental hospitals was under discussion. Both the documents deserve serious attention, and the Board of Control has addressed a circular letter upon them to the visiting committees of every county and borough mental hospital in England and Wales. The desire of the Board is to raise the status of the nursing service in mental hospitals upon some uniform plan. At the present time many mental hospitals have difficulty in attracting and in retaining suitable women nurses, and improvements in the nursing service should obviously be general and in accordance with a definite plan if the service as a whole is to be raised. The Board feels that when it becomes known that all progressive visiting committees of mental institutions are recognising the necessity of making the nursing service a more attractive career for men and for women, the difficulties of recruiting for the service should disappear. The recommendations made by the Board in its circular letter begin with an alteration in the nomenclature of the staffs, which has the advantage of defining the duties of the nurses in each grade of either sex, this making it easier to understand why in certain circumstances it is preferable that the nurses should have been certificated or registered in both general and mental nursing. The facilities for giving to men a general hospital training are as yet very imperfect, so that it is a counsel of perfection that only doubly trained male nurses shall be available for the higher positions in the service, but efforts, which will be welcomed by the Board, might well be made to induce general hospitals to accept men as probationers for training in general nursing. The suitable arrangements ought not to be hard to come by. Further recommendations on the part of the Board of Control emphasise the necessity of better remuneration and living accommodation in the service, and for further organisation to provide occupations and recreation. On the difficult subject of the nursing of male patients by women nurses the Board states definitely that there are many male patients who can be nursed by women nurses with great advantage, agreeing here with the Report of the Departmental Committee, which advocated a wider extension of the practice.

ECTOSCOPY.

IT is, of course, well known that a sudden cough leads to a slight temporary bulging of the intercostal spaces and a sudden inspiration to a slight temporary retraction. Dr. Eduard Weisz has studied this phenomenon in detail, and has found that slight temporary muscular movements produced by the same means are noticeable in regions that are at a distance from the chest, such as the abdomen and the back. An account of his work appears in another column of this issue. The best method of obtaining the movements is to get the subject to say suddenly the word "kitt"—the so-called speech phenomenon; but a sudden inspiratory sniff through the nose is also effective. Movements are best observed with the patient standing in a room with darkened walls and the light coming in from one side. Dr. Weisz has pointed out that the movements in the intercostal spaces occur at the borders of the lungs and they afford the best means clinically of determining the position of the base of the lung. This method of examination may be of real value in determining the

presence of fluid in the thorax, when the chest is dull to percussion, since the speech phenomenon is particularly evident under these conditions. In fact, the bulging of the intercostal spaces will coincide with the lower level of the fluid, and if experience bears this out, this will be the only method we possess of separating the dull area due to fluid from the liver or spleen beneath. Dr. Weisz also claims to distinguish between organic and functional disease of the abdomen, since his method is another way of determining the alteration in tone of the muscles overlying an abnormally affected viscus, an alteration which is ordinarily determined by palpation when a sense of rigidity is experienced. But a warning is necessary here. It is probable that such a means of investigation indicates an abnormal condition of the viscus, but not whether this condition is produced by organic disease, since the viscus which produces the symptoms may react in the same manner both from functional and organic disease. The method may be regarded as a worthy addition to the procedures of clinical investigation, and it has already received considerable attention on the continent, especially in Germany.

THE EARLY HISTORY OF AERONAUTICS.

THE Royal Society of Medicine held another successful social evening on Feb. 1st, when Dr. F. J. Poynton gave an address on the Part Taken by Doctors in the Early Days of Aeronautics. He traced men's interest in aerial flight back to the earliest recorded times. In the "Book of the Dead," he pointed out, the spirits were shown winged, and there were many stories of men aspiring to the sky drawn by eagles or with wings. The earliest illustration was found in a wood-cut of Dædalus and Icarus, published in 1493. Turning to the particular history of the lighter-than-air machine, the lecturer drew attention to the many celebrated names associated with it. Roger Bacon, Montanus, Leonardo da Vinci, Robert Hook, Cavarro, Swedenborg, Lavoisier, and Priestley had all been bitten by the craze, but, as so often happened, the solution of the problem came from an unexpected source. In 1782 the two brothers Montgolfier first saw a paper sphere filled with heated air float to the ceiling of their room. They gave their first public demonstration in the following year, when a sphere with a capacity of 65 cubic feet was successfully floated with heated air. The importance of their success was realised at once. Two and a half months later hydrogen was first used by Mr. Charles to inflate a balloon of such dimensions that 1125 lb. of iron and 560 lb. of sulphuric acid were required to supply it. Fierce controversy ensued as to which of the two methods was the better. Later, in 1783, a cage-balloon carrying a sheep, a duck, and a cock was sent up in the presence of the King, the Queen (Marie Antoinette), and a large and distinguished crowd. Among them were Marat, who was very interested in aeronautics; Mr. Charles, who was afterwards saved from the guillotine by his eloquent address to the crowd, in which he recalled his aerial experiments and the popular enthusiasm they aroused; and the famous de Rozier, who began life as a medical student at Metz, but turned to science to escape the ordeal of anatomy. He became director of the first science museum in Paris, and in 1783 made an aerial journey across Paris. Benjamin Franklin was the link between these Parisian ventures and England, through his correspondence with Sir Joseph Banks, in the course of which he wrote: "Your philosophy seems to be too bashful; in this country we are not so ashamed of being laughed at." But it was not long before the "balloon madness" of Paris, with its caricatures, toy balloons, stamped handkerchiefs, and even garters, spread to London, and in September, 1783, a balloon was sent up from the Artillery Ground. On Feb. 2nd, 1784, a 5-foot balloon let free at Sandwich floated across to Flanders, and was the first to cross the Channel. In Scotland the versatile and ill-fated Dr. Tytler made an ascent in a hot-air balloon on August 25th, but returned to earth with some precipitancy. His later attempts failed. In 1784 the Italian Lunardi arrived in London with letters of introduction to Banks and others, and in September made an ascent in a gas balloon which was filled for the occasion by Dr. George Fordyce, of St. Thomas's Hospital. Among the spectators on that occasion were Mr. John Sheldon, F.R.S., of Paris, surgeon to the Westminster Infirmary; Dr. Jeffries, a Boston physician practising in London; and the Frenchman, Blanchard. These three were the pioneers of early English attempts to fly. The first woman to make an aerial journey was Lunardi's friend, Mrs. Sage. On both sides of the Channel feverish preparations were being made to cross the water, and after several difficulties Blanchard and Jeffries succeeded in doing so on Jan. 7th, 1785, after a journey of 2 hours and 47 minutes. de Rozier's effort from Boulogne resulted in the balloon crashing on French soil and killing both him and his companion, de Romain. Dr. Poynton illustrated his lecture by a large series of rare prints and contemporary documents.

A DIAGNOSTIC SKIN REACTION FOR TYPHOID.

THE early course of typhoid fever rarely proceeds according to plan and there are many conditions which resemble it closely enough to give rise to anxiety. A reliable test which would exclude typhoid during the first few days of a febrile disease would be distinctly helpful in practice. Dr. G. Rodriguez, of Buenos Aires, has experimented on a skin reaction for typhoid which is analogous to the Schick and Dick reactions. He used Vincent's vaccine in doses of 100,000 bacilli in a volume of 0·1 c.cm., injected intradermally, and classified the reactions as weak, true, and strong, according to whether the result was a macule, a slight papule, or a large papule with tumescence. A series of 20 cases of typhoid and other diseases was tried with this dose, but the results suggested that it was too small, and Dr. Rodriguez increased it to 2 millions (in 0·1 c.cm.) for the next group of patients. Altogether the test was tried in 39 cases, of which 26 were typhoid in various stages, 4 were paratyphoid, and 9 were other febrile or bowel conditions. Of the typhoid cases 13 gave positive reactions, 12 negative, and 1 doubtful. All the remainder gave negative reactions. He concludes that early cases of typhoid give a positive reaction, which becomes negative again in convalescence, but not in the presence of a complication or relapse. Dr. Rodriguez quotes a paper by S. Costa, L. Boyer, and E. Giraud, who investigated a skin reaction produced by the filtrate of broth cultures filtered through a Chamberland candle. They found a negative reaction in 15 cases of typhoid fever, but 12 convalescent or cured cases gave a positive reaction. One normal individual and 11 with diseases other than typhoid also gave a positive reaction. Rodriguez attempted to repeat this work, but obtained only doubtful results.

VOLUNTARY HOSPITAL DEVELOPMENTS.

THE fourth report of the Somerset Voluntary Hospitals Committee, under the Voluntary Hospitals Commission, has just been issued, and justifies its affirmation of the new hold now obtained by the voluntary system on public sentiment. There is no doubt that during the last five years a real change of public opinion has occurred. The advantages of the voluntary system have become more widely appreciated, while its defects are being removed and some of its financial problems are being solved, and it is the public, of course, who is supplying the solutions. The appointment of the Voluntary Hospitals Commission with local committees in every county and borough was a definite admission, or rather statement, that the public is intimately interested in the existence of the voluntary hospitals. When, some four years ago, Parliament voted £500,000 to meet the urgent plight in which some of these institutions found themselves, it followed that

financial records, kept in accordance with some definite plan, became due to the community. The system of presentation of annual accounts in accordance with a uniform system has now been largely adopted, with the result that all who study the reports of their County Committee can understand what their own hospitals are doing for them, where the needs lie, and what claims there are upon individual or organised generosity. All classes have assisted in the financial recovery of the hospitals which has been a marked feature of the position since 1921, and the issue of such documents as the one before us will keep the general enthusiasm alive.

An important matter which the hospitals have recently been asked to consider is the institution of a general pension scheme for nurses. In February, 1923, the College of Nursing put forward a tentative scheme of universal application to all nurses in all forms of employment. Early in 1925 a Conference on Pensions for Hospital Officers and Nurses was convened by King Edward's Fund, and a scheme, which was prepared by a small committee of members invited to that Conference, has been circulated for the opinions of the voluntary hospitals. No recommendations were appended to the scheme; the difficulties ahead require deliberation. The last report of the Director of Hospital Services, Joint Council of the Order of St. John, and the British Red Cross Society, includes an article by Mr. H. N. Crouch, chairman of the Somerset Committee, in which the problem is set out with suggestions for its solution.

OSMOTIC THERAPY IN GLAUCOMA.

Two articles in the January number of the *British Journal of Ophthalmology* by W. S. Duke-Elder throw new light on the pathology of glaucoma and point to a new direction in which the treatment of that disease is likely to develop. Further advances in ophthalmology, said Sir John Parsons in his Bowman lecture for 1925, will not be along the lines of improvement or elaboration of operative technique, but rather by a fuller understanding of the biochemistry of the eye and of the physiology of vision. Mr. Duke-Elder's contribution to this advance consists in the first place of an experimental investigation into the reaction of the intraocular pressure to osmotic variation in the blood, and in the second place of a record of the results of the clinical application of knowledge so gained in the treatment of four cases of glaucoma. The mass of the experimental work on intraocular pressure that has been done hitherto has been chiefly concerned with its relation to the general blood pressure, but although the blood pressure in the veins of the retina must obviously constitute a limit higher than which the intraocular pressure cannot rise without causing their collapse, investigation has entirely failed to establish any constant relation between the two. No doubt the energy necessary for the maintenance of the intraocular pressure is derived from the blood-stream, but in considering this, to quote Mr. Duke-Elder, "in addition to the external dynamic energy of the blood in mass movement, which is measured as blood pressure, we must also take into account the internal kinetic energy of the blood in molecular movement, which is measured as osmotic pressure." To test this a series of experiments were performed on anæsthetised cats, the technique of which is fully explained. The main results of these experiments go to prove that the introduction of hypotonic saline solution into the blood is followed by a rise in intraocular pressure which lasts for some hours, while conversely the introduction of hypertonic solutions is followed by a corresponding fall in the intraocular pressure. In recording these experiments full credit is given to previous experimenters, of whose writings a considerable bibliography is appended. Indeed, one observer, E. Hertel, experimenting on rabbits, appears to have anticipated Duke-Elder's results. The clinical application of the knowledge so gained is already of much practical interest. A 30 per cent.—i.e., nearly saturated—solution of common salt was used. About 50 c.cm. of this solution injected slowly and evenly over a period of ten minutes into a vein is quite safe, and produces no discomfort except thirst (which must not be relieved). In the four patients so treated the intraocular tension was materially reduced, the effect lasting for several hours. Thus valuable time can be gained and operative measures performed under the best conditions. This is about as far as the practical application of the new treatment has gone at present. Whether or not more permanent benefit can be derived from it is a problem for the future.

CALCIUM DEFICIENCY AND WHOOPING-COUGH.

IT might be thought comparatively easy to estimate the various inorganic constituents of the blood; but they are present in such small amounts that until recent years their estimation has been attended by some difficulty, unless fairly liberal quantities of blood are available. Now, however, with the advance of biochemical methods, such constituents as calcium and phosphorus can be readily determined on a few cubic centimetres of blood. Such routine determinations have considerably clarified our conceptions of rickets, and along with radiographic control they have given precision to ultra-violet light treatment. Already determinations of blood calcium in other conditions are beginning to yield results, and this is strikingly illustrated by two references to recent literature on subjects so far apart as whooping-cough in infants and milk fever in cows. G. F. Powers, in the *American Journal of Diseases of Children* for November, describes five cases of whooping-cough in children under 17 months in all of which the blood calcium was below normal (10 mg. per 100 c.cm. of blood); in one of them it was as low as 4·9 mg. This suggests that the convulsive spasms of pertussis are related to tetany, in which there is a diminution in the blood calcium, and it is possible that in pertussis characterised by marked convulsions the administration of calcium might be useful. The possibility of benefit being derived from light treatment also suggests itself. In milk fever in cows, Little and Wright[1] have recently demonstrated that the blood calcium is definitely subnormal. In mild cases they found a drop of from 20 to 30 per cent. at the onset of the disease, and in severe cases the drop was as much as 60 per cent. This is one of the first well-attested facts in the pathology of a condition which has given rise to much controversy, and the findings are of interest in view of the suggestion put forward by Dryerre and Greig,[2] that milk fever is due to a relative deficiency in the parathyroids which gives rise to guanidine intoxication. While a lowered blood calcium does not necessarily imply a parathyroid deficiency the correlation of the two conditions is sufficiently marked to warrant research along the lines of the suggested endocrine upset. It seems probable that similar investigations in other diseases will reveal further disordered mineral balances in the blood.

THE INSTINCT OF SPEECH.

IN a recent number of the *British Journal of Psychology* (1925, xvi., 53) appeared a short paper by Dr. J. W. Tomb on the Intuitive Capacity of Children to Understand Spoken Language. The paper gives a summary of his observations of young children of English parentage born in India who, before the age of 18 months, are found able to understand and follow the directions of their parents in English, their ayahs in Bengali, and the house-servants in Hindustani, and who also at 3 and 4 years of age can converse freely with these different groups in their own tongues. The parents, on the contrary, with much labour and the aid of a teacher, may have acquired no more than is requisite to communicate necessary orders to the ayahs and house-servants, and do so often in disconnected words, unlike the children

[1] Brit. Jour. Exp. Path., 1925, vol. vi.
[2] THE LANCET, 1925, i., 1144.

who speak in sentences. Dr. Tomb's observations are of much interest, but the inferences from his observations, on which he invites criticism, are open to question. "It is obvious," he says, "that a child's capacity for learning languages does not depend on intelligence, for if this were the case it is reasonable to assume that the parents would pick up the various vernaculars more quickly than their children." Most psychologists would grant that the linguistic capacity is not dependent on "general intelligence" alone, but is partly a "specific" innate capacity of the mind. Speech itself is an inborn instinct which, like all other instincts, lives by what it feeds upon and has its period of maximum activity during the early years of life. If no food be provided in the form of audible speech, as in the case of the child born deaf, the result is the deaf-mute. If, on the other hand, three or four languages be audible, all will be assimilated with equal ease, particularly during the early years. Let the admission of the deaf-mute into the deaf school be delayed until the age of (say) 10 or 12, and his acquirement of speech will be difficult, because of the weakening of the instinct from lack of use. In a similar way the Englishman transferred to India after attaining maturity has relative difficulty in understanding and acquiring facility in the native dialects. It is not, then, so much a matter of intelligence as of the functioning of an instinct, and Dr. Tomb's observations are confirmatory of what was previously known. The further inference made that a child must have a capacity for "intuitively placing the correct meaning on spoken sounds" is, we think, more than the facts justify. Meaning is indicated or suggested to the child in some manner other than speech, but he must obviously have the capacity to grasp and remember the association.

SURGICAL EXAMINATIONS.

THE qualifications demanded of a surgeon are many and exacting. Essentially he must have manual dexterity of a high order and his judgment must be sound; whilst a wisdom which comprehends more than the knowledge of his actual craft is almost a necessary asset. The evolutionary changes of late years have made him more and more independent of his medical colleague. The days have gone when the physician's advice as to the time and nature of an intervention in acute abdominal disease was sought as a matter of course. The vivid pictures of the operating-table have transformed the surgeon into a clinician whose pre-operative opinion has become of unassailable value. Whether it be in the realms of neurology or of diseases of the abdomen or chest, we see this change occurring, and perhaps a new generation of specialists will arise who will treat indiscriminately the medical and surgical diseases of the particular system of the body to which they have given their attention. At present the qualifications of the aspirant to surgery are tested by examinations which are chiefly calculated to reveal his clinical knowledge; and this they do with efficiency. His technical ability remains a closed book to the examiner. Yet how important manual dexterity is in surgery; every incision made is an irrevocable step taken, after which, however skilfully performed, there can be no absolute restitution to the status quo ante. Save in the case of nerves repair takes place solely by scar-tissue formation, and the body can never again be quite so perfect as it was before the surgeon's intervention. Sometimes the deviation from normal is so slight that it is not, or cannot be, noticed by the patient, and naturally this ideal is more often reached by the superlatively skilled than by the occasional operator. The remembrance of this fact indicates how essential it is to ensure reasonable technical ability in all those upon whom diplomas in surgery are conferred. To prevent that licensing of the incompetent, of which he recently complained,[1] Sir John O'Conor sends us a suggestion that "every candidate for any surgical diploma shall present full notes of cases with complete details ('steps') of ten major operations, on the living subject, performed by himself—each record to be signed by the surgeon (teacher) who *personally* directed and assisted him in each operation." As examples of those which he includes in the category of major operations Sir John O'Conor mentions those performed for septic fractures, arthrotomy, varicose veins, hydrocele, hæmorrhoids, empyema, urinary extravasation, septic endometritis, and incomplete abortion. The principle is good, for too much care cannot be taken to render men proficient who propose to practise surgery. An alternative system might require candidates to have held an appointment equivalent to that of a first assistant in a continental clinic for a definite period longer than the usual tenure of office of house surgeons in this country. It is an undisputed fact that much experience and knowledge of technique can be acquired by close association with a master surgeon, and if the candidate were required to have performed operations assisted by his teacher all reasonable steps would have been taken to render him proficient. There are, however, difficulties in carrying out such suggestions with our present system of medical education.

[1] THE LANCET, 1925, ii., 781.

CANCER IN RELATION TO OCCUPATION.

AN investigation into the Statistics of Cancer in Different Trades and Professions by Dr. Matthew Young and Mr. W. T. Russell, with the collaboration of Dr. John Brownlee and Dr. E. L. Collis[1] has just been published as a green book (Special Report Series No. 99) by the Medical Research Council. The work has been made possible by the courtesy of the Registrar-General in affording facilities of access to certain documents in his possession. These included cards on which were coded the sex, age, specific trade, and cause of death of men who died in 1910, 1911, and 1912. On 46,118 cards which recorded deaths from malignant disease the site of the tumour was for the most part noted, and it has thus been possible to make a detailed survey of the relation of cancer to occupation. A brief introduction is followed by a discussion of previously published data. The methods of analysis used in this investigation are then set out. There follow sections on the incidence of cancer in the principal sites in different occupations, and on the relationship between different types of cancer, between cancer in different sites and syphilis, and between cancer and chronic alcoholism. The conclusions of the investigation are then briefly summarised. The close association of some types of cancer with exposure to particular risks—for example, chimney-sweeps' cancer and mule-spinners' cancer—has been confirmed, but no conclusive evidence has been obtained of such a connexion between the nature of the employment and other forms of cancer, notably internal forms. In some occupations excessive smoking and drinking, which is permitted or facilitated by the nature of the occupation, appears to be the important predisposing factor and not anything inherent in the employment itself, while the incidence of syphilis in different occupational groups seems to have some association with that of lingual cancer. With the main conclusion that occupational risk is only one of several predisposing causes of cancer in different instances and under different circumstances all are likely to agree.

It was hoped that such an examination might give further information as to the wide influence of substances already recognised as harmful, or might even disclose other injurious substances. But the difficulty of interpreting the material has proved very great, and the result of a praiseworthy and laborious effort appears on the whole to be disappointing. In many trades or occupations the number employed is small and consequently the number of deaths is liable to considerable random error. Again, as is made clear in the foreword to the report, statistical science is still in a developmental stage, and there exists difference of

[1] H.M. Stationery Office. 1926. Pp. 50. 1s. 6d.

opinion between persons equally competent to judge as to the applicability of particular methods of comparing figures. For example, the strong preference expressed by the authors for the use of the so-called life table death-rates over standardised death-rates is not shared by some of their colleagues, and there are other technical points over which experts are not yet in agreement. The use of the method of proportional mortality has the disadvantage that the proportion of cancer of any particular site in one occupational group may be high simply because within that group the rate of mortality from cancer of another site is low, and the majority of the Statistical Committee of the Council are of opinion that conclusions based upon this method and unconfirmed or incapable of confirmation by a study of the site rates themselves should be accepted with reserve. However, sufficient material is provided in the tabular matter of this report, and in data previously published, to permit other investigators to try and elucidate this complex subject by pursuing research on different lines.

MEDICAL PRACTICE IN CHINA.

THE status of qualified medical men in China, whether missionaries or otherwise, is likely to be very uncertain if the rights which they have enjoyed as foreigners should be abolished. At present no protection is afforded them comparable to that which the profession has in England, America, and elsewhere. If a doctor in China has no status from a treaty he may be sued in a Chinese court and have to meet very heavy claims for damages, as was illustrated quite recently when a German doctor lost a patient after an operation and had to pay $3000 damages. The Chinese custom of paying the doctor as long as the family is in health need not complicate the situation, for after all it is but an illustration of contract practice, but the immediate difficulty is that there is no sort of medical registration. People with the most rudimentary knowledge—embryonic medical students or even hospital coolies—frequently set up in practice on their own, and such organisations as the China Medical Association and the China Medical Missionary Association are quite unable to control the unqualified practitioners. If no protection for medical men is arranged at the Extra-Territorial Conference their work in the future will be carried on with great risk and difficulty. If failure leads to financial disaster it may be supposed that only simple cases will be undertaken. There is little reason to think, however, that the Chinese Government would not welcome, in the interests of the medical profession among its own nationals, the setting up of a register of properly qualified medical men. Perhaps the plan followed by the Japanese when they took over Korea may be adopted. At first they had to recognise the existing native practitioners and doctors holding British degrees (these are still recognised). Only a five years' recognition within a limited area was granted to a large number of American doctors, but after the matter had been taken up diplomatically those who were already at work in Korea were given full permission to practise. Since then every newcomer from America has had to take a Japanese medical examination, and though an elaborate system of certificates and reports has been instituted and doctors are constantly under inspection, the net result, it is said, has been to the advantage of medical standards.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.—A post-graduate course started on Feb. 1st and will go on until March 26th. It includes demonstrations in the out-patient clinic on Monday, Tuesday, Thursday, and Friday afternoons, and a series of lectures by Dr. J. G. Greenfield, on the Pathology of the Nervous System, on Mondays at noon. If there are enough applicants there will also be lectures on the anatomy and physiology of the nervous system and clinical demonstrations on methods of examination. Further particulars may be had from the Dean of the Medical School of the Hospital, Queen-square, Bloomsbury, London, W.C. 1.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CLIX.

TREATMENT OF HYSTERICAL DISORDERS IN CHILDREN.

HYSTERICAL disorders below the age of puberty are not common, but do occur more frequently, even in quite young children, than is often supposed. Methods of treatment directed towards the immediate disabilities or symptoms of hysteria seldom fail. Greater difficulty is experienced in preparing against their recurrence. The hysterical temperament, when present, is inherent, not acquired, and, as Charcot says, "once hysterical, always liable to hysteria."

Hysteria is a condition difficult to define satisfactorily owing to the diversity of its symptoms, and to the lack of any known anatomical lesions on which to base its pathology. Definitions have been advanced by physiologists and psychologists, many of which are adequate up to a point, but none are sufficiently comprehensive to be entirely convincing. At the present day hysteria is generally considered to be a purely psychical disorder. The views of Babinski, Janet, and Freud are well known and need not be set out here. There are at least two outstanding features in the composition of hysterical subjects—namely, the presence of a neurotic temperament, with want of emotional balance and control of the will, and an unstable condition of the sympathetic nervous system. These are really the sources from which hysterical disorders spring. Evidence of sympathetic vaso-motor instability is more readily seen in the adult in such symptoms as flushings, faintings due to abdominal vascular distension with cerebral anæmia, and coldness and cyanosis of the extremities affected by hysterical palsies, often associated with absence of bleeding on pin-prick. Savill was the first to emphasise the importance of the rôle played by the sympathetic nervous system in hysteria, and even went so far as to state that most of the motor disorders of hysteria might be accounted for by local disturbances of the cerebral circulation. He was much impressed by the similarity of many hysterical motor disorders to those produced by definite vascular lesions in the brain. The continuation of the symptoms in the hysterical cases for indefinite periods after the supposed vascular disturbance he attributed to the psychical state of the patient. Although it is hardly possible to agree with all of his hypotheses, yet his theory of hysteria is decidedly attractive by reason of the effort made to formulate a pathological basis.

Hysterical Manifestations in Childhood.

The commonest hysterical disorders in childhood are related to the motor system, and consist of paraplegias and monoplegias. Both spastic and flaccid types occur, but the loss of power is seldom complete, and shows variations in degree from day to day. In the spastic form, which is the commonest, some degree of flexion spasm or contraction is often present at the joints, and severe pain is usually complained of. Hysterical pain and spasm localised to a single joint, usually the hip, is sometimes observed, and may simulate very closely organic hip-joint disease. Spinal rigidity resembling caries is another hysterical manifestation sometimes met with in children. That curious condition known as astasia-abasia, in which the patient can scarcely stand or walk, and yet is able to perform all movements of the legs voluntarily when lying in bed, may also be observed. Sensory manifestations by themselves are exceedingly rare, but may be present in association with paralysis, and usually assume the stocking and

glove distribution of anæsthesia, with a definite upper level which is characteristic of their hysterical nature. Other manifestations which may arise are hysterical dysphagia, aphonia, and hysterical vomiting. Mutism, defects of vision, ptosis or spasm of the orbiculares palpebrarum, tremors and convulsions of hysterical origin are very rarely met with before puberty.

Ætiology and Diagnosis.

Evidence of neuropathy is nearly always traceable in the parentage of those who are the subjects of hysteria. The children of alcoholic parents are liable to be affected. The instability of the nervous system is inherited and permanent, but may be influenced by training. It is an interesting fact that before the advent of the secondary sex characteristics the disproportion between the sexes in the incidence of hysteria is very much smaller than after puberty. In fact, in childhood almost as many boys as girls are affected. Five years is roughly the earliest age at which hysterical disorders may be observed.

In hysteria the necessity of the diagnosis being correct is of the utmost importance. The most likely diseases in childhood to be confounded with hysteria are poliomyelitis, early spinal caries, and organic disease of the joints; disseminated sclerosis can fortunately be excluded at this period. It is well to remember that most hysterical disorders in children arise in association with some slight trauma which has caused local pain, or may even be superimposed upon some organic lesion in its early stages, such as tuberculous disease of bone. Other cases seem to be occasioned by purely psychic causes, such as shock and grief, or a child may by a process of subconscious imitation develop the infirmities of another individual with whom it has been in close contact. Stigmata of hysteria, such as hysterogenic zones, globus hystericus, flushings and faintings, which are an aid in diagnosis among adult patients, are very rarely observed in childhood. Numerous children are of the emotional or "nervous" type, but those which are liable to hysterical manifestations present no hall-mark by which to distinguish them.

Treatment.

An essential feature in the treatment of the hysterical child is to recognise the type of mother one has to deal with. Very often she is highly neurotic and unwittingly does her best to foster the "functional" defect from which her child is suffering. Separation from home influences is always desirable, and is more easily obtained among patients of the hospital class. Gentle but firm persuasion that the loss of function will soon disappear will effect recovery in most cases. Massage, passive manipulations, and the faradic current are useful accessory aids. Many cases make a sudden and spontaneous recovery, especially when the patient has been placed in new surroundings. In overcoming contractures splints are to be avoided, as their presence only exaggerates the importance of the complaint in the patient's mind. Drugs are seldom necessary, but bromides and the tinctures of valerian and asafœtida may be employed in small doses, especially as they are antispasmodics and may possibly exercise a beneficial influence upon the unstable nervous system. The symptoms of hysteria are for the most part readily cured in children, as they are usually of a more simple character than those met with in the adult. Firmness, assurance of success, and the inspiring of confidence in the patient's mind are the most potent means the physician has in dispelling the manifestations of hysteria.

A word must be said on the question of the value of psycho-analysis as a form of treatment. While not denying that success may be achieved by this means in adolescent and adult patients, yet the employment of psycho-analysis in children is neither desirable nor necessary. The least contentious argument against its use is that the child's mind, and especially that of the hysterical child, is not sufficiently developed to reason formally.

The struggle, however, is not over when the hysterical paraplegia, let us say, has been overcome. An effort should be made to modify the routine of the child's daily life that recurrences may be avoided. A return to the home surroundings and over-zealous attentions of a neurotic parent will often lead to a renewal of hysterical symptoms. The nature of the trouble should be explained to the parents, and, if possible, their coöperation acquired with a view to avoiding an excess of attention being given to each childish complaint. Regular habits, open-air exercise, and the acquisition of interests or hobbies of a healthy nature should be encouraged. Excitements and overfatigue should be shunned. The diet should be simple and liberal, and any physical ailments underlying the hysterical symptoms must receive attention. Trouble taken in training the child to keep its emotions within control and to exercise its will-power is well expended.

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Special Articles.

PROCEEDINGS OF THE ROYAL COMMISSION ON NATIONAL HEALTH INSURANCE.*

(*Continued from p. 1356, Dec. 26th, 1925.*)

Conclusion of Sir Walter Kinnear's Evidence.

(Q. 23648–23829.)

AMONGST other matters dealt with by Sir Walter Kinnear, Controller of the Insurance Department of the Ministry of Health, in the concluding part of his evidence was the question of continuing to give exempt persons medical benefit in return for the employers' contributions in respect of them. The witness said that he would regret to see such persons deprived of medical benefit, and he thought that employers would regard it as only right that their contributions should be applied in the interests of the health of their employees. He thought that the income limit for exempt persons who should be required to make their own arrangements for medical benefit should be raised from £160 to £250 so as to bring them into line with the limit adopted for voluntary contributors and with that for the exception of non-manual workers from insurance.

With regard to the additional benefits which societies can at present provide out of their surpluses and which are specified in the Act under 18 separate heads, Sir Walter Kinnear said that medical treatment for the dependants of the insured could not suitably be dealt with as an additional benefit, but should be faced as a problem affecting the whole insured population. He also suggested that certain other additional benefits, such as those which provide for the payment of pensions or superannuation allowances and the payment of contributions to superannuation funds, should be eliminated as being available to only a minority of the members of a society at the expense of the general body. Another suggestion supported by the witness was that if societies wanted to pay as an additional benefit sickness benefit from some date other than the fourth day (the normal date) they should only be allowed to do so as from the first day.

With regard to suggestions made to the Commission that payment of cash benefits should be made in cases of partial incapacity—e.g., to tuberculous persons capable of doing only part-work—the Controller drew a distinction between cases where such work was done as part of medical treatment in an institution and

* References to the paragraphs in the printed statements issued as appendices to the reports of the oral evidence are given thus: "App. X. 69," and references to the oral evidence thus—Q. 1369.

those cases where the person was working for an outside employer. As to the latter he said :—

The test of partial incapacity (to be graded presumably according to the degree of incapacity) would involve rather serious administrative difficulties. So far as I can voice the mind of societies on the matter, I think societies would hesitate to undertake the task, and, indeed, I think it would be a very difficult provision to administer. On the whole, therefore, I am rather inclined to think, much as we may sympathise with the proposal, that it is scarcely one that should be adopted.

Poor-law and other Local Medical Services.

(App. CIV. and Q. 24025–24245.)

Mr. A. B. Maclachlan and Mr. H. W. S. Francis gave evidence on behalf of the Ministry of Health with regard to various health services other than the insurance medical services. Generally speaking, they said, the spheres of the insurance medical service and the maternity and child welfare service were mutually exclusive, and they indicated what was necessary to secure proper coördination between the two services. There was overlapping between the Poor-law and other local services, both in the case of maternity and child welfare, and in regard to tuberculosis. The stigma supposed to attach to Poor-law treatment was steadily decreasing in force in every class of case. As to coöperation between general practitioners and tuberculosis officers, the witnesses said :—

It is not claimed that fully satisfactory coördination has yet been attained in all parts of the country. Much depends on the personality of the tuberculosis officer and his relations with the practitioners in the particular district, and there will probably always be opposition in some quarters to the use of set forms as a means of collaboration. There is evidence, however, that the respective functions of the tuberculosis dispensary and of the insurance practitioners are gradually coming to be better understood ; and that the dispensaries are tending to adhere more closely to their proper rôle as centres for consultation, expert examination, special treatment, &c.

On the question of destitute sick persons having free choice of doctor, the reply was that such a service would tend to be extremely costly ; it would be very difficult to limit the liability of the local authority to sick persons who were in fact destitute, and a service ought not to be provided at the public cost without public responsibility for its quality.

As to free choice generally in the case of a public medical service, it was said :—

The principle of free choice would be retained under a capitation system and within limits it would be possible even with a salaried system in urban areas. In many rural areas there is practically no free choice now, and the position would not be materially changed, whatever system was adopted, on the institution of a public medical service.

On the subject of administration of unified medical services, the Ministry representatives said that the consultative council on local health administration had expressed strong opposition to the appointment of an ad hoc independent body for the purpose of administering health services. The council had recommended :—

(*a*) That the county borough councils should be the local health authorities for county boroughs and should be required to submit schemes to the Ministry of Health providing for the inclusion under one authority of all existing health services ; (*b*) that while it would be desirable to correlate all health services within the area of each administrative county, it would be undesirable that all health services within that area should be administered by one authority.

Further Scottish Evidence.

(App. CV. and Q. 24246–24397.)

Sir James Leishman and Mr. G. W. Wight said that they were, in the main essentials, in agreement with the evidence given by the Ministry of Health representatives. With regard to extended services, they thought that dental treatment and convalescent care could not at present be added because the funds available were not sufficient.

We would very greatly value aids to diagnosis, second opinions, electrical treatment, massage and so on, and we would greatly value such a measure of finance as would enable us to help the voluntary hospitals in Scotland if they are to continue to be an integral part of the medical machine.

Discussion with surgeons and physicians had established the view that an extension of medical benefit was to be preferred immediately to dental treatment, the importance of which, however, was not minimised. The cost of the former on the lines indicated was about 3*s.* per annum per insured person, but dental treatment would cost about 7*s.* 6*d.* With regard to Poor-law beds, Sir James Leishman said that the handing over of these to the local authority would not, in Scotland, very materially lighten the burden, because there are far fewer beds than people think, and any excess may be in places where the beds are not wanted.

Sir William Glyn-Jones on the Future of Insurance Committees.

(Q. 24398–24532 and App. CVI.)

Sir William Glyn-Jones, who for many years was chairman of the Middlesex Insurance Committee and had also been chairman of the National Association of Insurance Committees, gave his opinion, which was opposed to that of the National Association, that while insurance committees fulfilled a very useful purpose in the initiation and early years of the insurance scheme, the time had now come when, owing to a variety of causes, their powers and duties should be transferred to the larger local authorities. He said that neither the arrangements with the doctors nor those with the pharmacists have ever been in the hands of the insurance committees. His view was that the administration of medical benefit had become almost entirely routine and office work, which, he said incidentally, was carried out most efficiently by the existing staff, who would undoubtedly have to be absorbed by any local authority taking over the arrangements. As regards the lack of material requiring the considered judgment of the Committee, the witness said that the average length of time of a committee meeting for the Middlesex Insurance Committee in the last two years would be about a quarter of an hour at each of the 12 meetings. He pointed out that the work in connexion with tuberculosis which was originally performed by insurance committees, and which did afford some opportunity for real exercise of judgment, had inevitably had to be handed over to the local health authority. The question of transfer of functions of insurance committees fell, said the witness, within the second part of the Terms of Reference of the Royal Commission on Local Government, which is : "To investigate the relations between the several local authorities and generally to make recommendations as to their constitution, areas, and functions."

National Confederation of Employers' Organisations.

(Q. 24533–24813 and App. CVII.)

Mr. J. Forbes Watson and Mr. J. A. Gregorson gave evidence on behalf of this confederation, which, they said, represented the views of employers of about half the insured population. The purpose of their evidence was to show that the cost of the various social services was more than the industry of this country can continue to bear and immeasurably greater than that which the industry of any other country is called upon to bear ; that the existing cost of the health insurance service is out of perspective in relation to the cost of the other social services ; that the existing system of health insurance is over-financed, and that an immediate and substantial reduction in the present rate of health insurance contributions can be effected while still retaining the system on an actuarial basis and providing the benefits which it contemplated. While concurring

in the view that the money spent on health insurance improves the health of the worker, they thought it quite a matter of speculation whether the expenditure was repaid by the greater efficiency, wage-earning capacity, and general contentment of the workers. The first consideration was the fullest possible measure of employment, and if more money was being taken out of industry than was essential for the existing statutory benefits, the view of the employers was that this was harmful to industry and therefore to the workers. They were not prepared to say by exactly how much the contributions could be reduced, but thought that the Government actuary might be a little more optimistic in his views, and in any case they suggested that the burden would be more equitably distributed if the taxpayer paid a higher share, and the employer, as such, a smaller share as the counting of heads of the numbers employed did not give the most equitable distribution of the burden.

In previous articles the proceedings of the Commission were reported under the following headings: Introductory Note; The Scope of the Insurance Scheme (see THE LANCET, Jan. 31st, 1925, pp. 247–8); The Provision of Medical Benefit (Feb. 7th, pp. 301–3; Feb. 14th, pp. 355–6; Feb. 21st, pp. 403–5); Financial Provisions of the Act (Feb. 28th, pp. 454–7); Medical Certification and the Regional Medical Staff (March 7th, pp. 508–9); The Approved Societies and the Money Benefits (March 14th, pp. 564–5; March 21st, pp. 623–4); Evidence of the Hearts of Oak Society (March 28th, pp. 677–9); Evidence of the National Conference of Industrial Assurance Approved Societies and of the Manchester Unity Approved Society (April 4th, pp. 731–3); Evidence of Independent Order of Rechabites, of Rational Association Friendly Society, and of Miners' Societies (April 11th, pp. 784–6); April 18th, p. 839; Evidence of Mr. Alban Gordon (April 18th, pp. 839–40); Evidence of Joint Committee of Approved Societies, of Stock Exchange and Lloyds' Health Insurance Societies, and of Group of Catholic Approved Societies (April 25th, pp. 889–91); Evidence of the National Insurance Beneficent Society (May 2nd, pp. 943–4); Evidence of the British Medical Association (May 9th, pp. 993–5); Evidence of the British Dental Association and other Dental Organisations (May 16th, pp. 1044–6); Evidence of the Insurance Committees (May 23rd, pp. 1097–8); Evidence of Various Approved Societies (May 30th, pp. 1135–6); Evidence of the British Medical Association (June 6th, pp. 1184–6; June 13th, pp. 1248–50; June 20th, pp. 1315–6); Evidence of other Medical Bodies (June 20th, p. 1316; June 27th, p. 1348); Individual Evidence (June 27th, p. 1348); Medical Services in the Factory, Ministry of Health Inquiry Room, Evidence of National Sailors' and Firemen's Union and of Loyal Order of Ancient Shepherds (July 4th, p. 36); Evidence of Friendly Societies' Medical Alliance, South Wales and Monmouthshire Alliance of Medical Aid Societies, Friendly Societies' Medical Officers' Union, Association of Approved Societies, Standing Committee of Scottish Insured Women, and Society of Medical Officers of Health (July 11th, pp. 86–8); Evidence of the British Hospitals Association, the Sheffield Joint Hospitals Council, and the Middlesex Hospital (July 25th, pp. 181–2); Evidence of Opticians' Associations (August 1st, pp. 224–6); Evidence of Council of British Ophthalmologists, of Ophthalmic Benefit Committee, of Chemists, and of Drug Store Proprietors (August 15th, pp. 348–50); Evidence of Chartered Society of Massage and Medical Gymnastics, of the Ivory Cross, of Scottish Panel Chemists, Practice among Highland Crofters, and of National Farmers' Union of Scotland (August 22nd, pp. 402–3); Evidence of Nursing and other Women's Organisations (Sept. 5th, pp. 519–20); Views of Trade-Unions, Evidence of Approved Societies (Sept. 19th, pp. 618–9); Evidence of Joint Tuberculosis Council, Cambridgeshire Tuberculosis After-Care Association, London County Council on Treatment of Tuberculosis, British Social Hygiene Council, and London Insurance Committee (Oct. 3rd, pp. 722–3); Evidence of Society of Apothecaries of London, East of Scotland Dentists' Panel, Association of Poor-law Unions, Association of Parish Councils of Scotland, and of Mr. W. J. Braithwaite (Oct. 17th, pp. 828–9); Evidence of National Council of Agriculture, as to Casual Employees of Councils and Delay in Paying Sickness Benefit, of National Insurance Audit Department, Chartered Accountants of Scotland, Department of Economics (Cambridge), the Actuarial Basis of the Act, and of the Government Actuary (Nov. 7th, pp. 985–7); Provision of Extended Medical and Allied Services, Specialist and Consultant Services, Treatment of Dependants, Income Limit of Manual Workers, and Hospital Provision (Nov. 28th, pp. 1123–4); Official Evidence (Dec. 12th, pp. 1247–8); Evidence as to Question of Proof of Unemployment, and of Sir Walter Kinnear (Dec. 26th, pp. 1355–6).

PEOPLE'S LEAGUE OF HEALTH.—A series of eight lectures on the Mind and What We Ought to Know About It is being delivered by medical men on Mondays at 6 P.M., from Feb. 1st to March 22nd, at the house of the Medical Society of London, 11, Chandos-street, W. Further information and tickets for the course, price 10s., may be obtained from the hon. organiser, People's League of Health, 12, Stratford-place, London, W. 1.

THE GENERAL MEDICAL COUNCIL.

MEMORANDUM AS TO THE CONSTITUTION, FUNCTIONS, AND PROCEDURE.

BY THE REGISTRAR.

THERE is so much misconception at the present moment in regard to the General Medical Council, not only amongst journalists and the public, but amongst members of the medical profession themselves, that it seems advisable to give accurate information on the subject, in order that it may be more widely known how the Council is composed, what are its duties, and how these are carried out. What follows may be found in the documents prefixed to the Medical Register, in the published minutes and standing orders of the Council, in the public addresses of the President, and in Harper's "Legal Decisions upon the Medical and Dentists Acts" (Constable and Co.).

Constitution.

The Council was constituted under the Medical Act, 1858, and its composition was somewhat altered by the Act of 1886. It now consists of 18 members appointed by the universities in the United Kingdom having medical faculties; of 9 members appointed by the medical corporations, such as the Royal Colleges of Physicians and Surgeons; of 5 members appointed by His Majesty in Council; and of 6 members directly elected by members of the profession as a whole—a total of 38. To these are added 3 dentists who are members of the Dental Board and are appointed for dental business. The universities may appoint either medical men or laymen; generally it is not the medical faculty of the university that appoints the member, but the academic governing body, whatever that may be. In Cambridge, for example, he is elected by the members of the Senate, in the same way as the representatives in Parliament. The representatives of the medical corporations must be members of these bodies, and consequently must be registered practitioners. The representatives nominated by His Majesty in Council are generally appointed for special reasons, relating to departments of the public medical service. For instance, the chief medical officers of the public health departments in England, Scotland, and Ireland have been or are among them; the medical editor of the British Pharmacopœia, 1914, was recently appointed by the Crown with reference to his special knowledge of this department; for many years before the formation of the Dental Board, Sir Charles Tomes was appointed to represent dentistry; Sir Francis Champneys, the chairman of the Central Midwives' Board for England, was appointed soon after that body came into being, when the rules of the Board became subject to the approval of the Council; and so on. The direct representatives are practitioners elected, four from England, one from Scotland, and one from Ireland, by ballot of all the members of the profession having registered addresses in these countries respectively. The nominees of the Privy Council and the direct representatives of the profession are appointed for five years. The representatives of the universities and medical corporations may be appointed for five years or less.

It will thus be observed that the 18 members appointed by the universities, and the five members appointed by His Majesty in Council, may all be laymen; but so far no laymen have been appointed. As will be seen later, the functions of the Council are largely concerned with medical education, and consequently the universities have found it expedient to appoint members of their body conversant with this subject, and the Privy Council have found it desirable to appoint persons having special knowledge of certain subjects of public importance, which might not otherwise be represented.

It is important that the constitution of the Council should not vary too quickly, because the Council

meets only twice a year, and its executive committee only three or four times. It naturally takes some time for members to become acquainted with their duties. Moreover, it is important that members should have some knowledge of precedents in regard to education and to judicial decisions. And again, when applications are received from practitioners whose names have been erased from the Register for their restoration thereto, it is desirable that there should be members present who were in attendance when the case was originally heard, and therefore have the circumstances in their personal recollection.

Functions.

Sins of commission—more often sins of omission—are freely laid to the Council's account, of which, from its very nature and constitution, it cannot be otherwise than guiltless. It is reprimanded for doing what the law says it *shall* do. It is bitterly reproached for leaving undone what the law gives it neither power nor means to do. It is spoken of at one time as the "Parliament of the profession," yet it has no authority to legislate for anybody, and it cannot make even a by-law for any but its own proceedings. At another time it is scornfully described as a "doctors' trade-union"; yet it cannot legally levy an annual subscription, or say a word on the matter of rates of pay, or hours of work, or disputes with employers, or theories of practice; it offers no pecuniary benefits or strike-pay; and it *can* be sued in the courts like any other corporation. It exists, in fact, for the protection of the public, not of the profession.

The Council is, in fact, neither a parliament for making professional laws nor a union for protecting professional interests.

When the Council was created nearly 70 years ago, the declared purpose of the legislature was not to promote the welfare of professional men or professional corporations—it was not to "put down quackery," or even to advance medical science. The object in view was simply the interest of the public. The preamble of the Act of 1858 consists of two lines only:—

"Whereas it is expedient that persons requiring medical aid should be enabled to distinguish qualified from unqualified practitioners: Be it therefore enacted. . . ."

The preamble, as will be seen, recognises two kinds of practitioners: the "qualified" and the "unqualified." Up to that time (1858) no easily-understood line was drawn between the two, and when the public desired to make a choice, they were frequently at a loss. The Act set up machinery for, as it were, "hall-marking" the qualified practitioner, so that he might easily be recognised when his services were required. But the public were left free then, as they are free now, to seek "medical aid" from the unqualified practitioner if they like. And the unqualified practitioner was left free then, as he is free now, to practise for gain among those who choose to employ and pay him. He was forbidden, under penalties, to pretend that he was qualified, by taking a title he did not possess; he might not use the courts for the recovery of his charges; he could not give a valid certificate of sickness or death; and now by the Regulations made under the Dangerous Drugs Act he cannot prescribe certain dangerous drugs, like cocaine or morphine; but except for these and a few other not very inconvenient disabilities, he was untouched by the law.

On the other hand, the "qualified" men, as a set-off to their new legal status and official recognition, were subjected to a new central control, educational and disciplinary. They obtained no monopoly of practice among the public in general. They were afforded no special "protection" against the competition, not always scrupulous or insignificant, of the uncontrolled unqualified practitioner.

The qualified practitioners might fairly have claimed that it would be good for the public, as well as for themselves, if monopoly of practice, and protection against the competition of the untrained, had been conferred upon them. In other countries, and in other parts of the King's dominions, the restriction of practice to the qualified is with general consent and approval enforced by law. There, any unqualified person who habitually and for gain practises or holds himself out as practising any branch of medicine or surgery is liable to severe penalties. In this country, indeed, the practice of dentistry and the practice of midwifery have been by law restricted to qualified persons. But in these days it requires some resolute ignoring of the signs of the times to believe that, in this free country, legislation restricting the practice of medicine and surgery to qualified persons only is either probable or possible in the near future.

In one significant respect, however, the Council is empowered to "protect" the aspirant to qualification—not against the competition of the unqualified, but against the possible action of the licensing bodies in restricting his freedom when qualified. Section 23 of the Medical Act, 1858, reads thus:—

"23. *Privy Council may prohibit attempts to impose restriction as to any theory of medicine or surgery by Bodies entitled to grant certificates.*—In case it shall appear to the General Council that an attempt has been made by any body, entitled under this Act to grant qualifications, to impose upon any candidate offering himself for examination an obligation to adopt or refrain from adopting the practice of any particular theory of medicine or surgery, as a test or condition of admitting him to examination or of granting a certificate, it shall be lawful for the said Council to represent the same to His Majesty's Most Honourable Privy Council, and the said Privy Council may thereupon issue an injunction to such body so acting, directing them to desist from such practice; and in the event of their not complying therewith, then to order that such body shall cease to have the power of conferring any right to be registered under this Act so long as they shall continue such practice."

Once a practitioner has been trained and tested in the knowledge essential for public safety, he may adopt any "theory" of medicine or surgery in which he honestly believes.

The instrument which Parliament set up for the purpose of marking the distinction between qualified and unqualified persons is called the Medical Register. And the making and keeping of this Register is entrusted to the Medical Council. On the Register are placed the names of those who have passed certain tests of professional fitness. These are called registered practitioners, and these alone the law declares to be duly or legally qualified. The Council has to see that the tests of professional fitness actually applied by the examining bodies to aspirants for registration are "sufficient." The tests must ensure that all those who pass them possess "the knowledge and skill requisite for the efficient practice of medicine, surgery, and midwifery." The Council has also to see that no registered person, who by crime or misconduct has become unworthy of the legal status which registration confers, shall remain on the Register. In other words, the two great functions which the Council in the public interest discharges are, first, to prevent the unfit from gaining access to the Register; and, secondly, to remove the unworthy from it. Except as to a few subsidiary matters, such as the preparation and issue of the British Pharmacopœia, the control of diplomas in public health, the scrutiny of the midwives' rules, and the like, all its powers and all its work in relation to the medical profession have reference to these two functions. It is a council of education and a board of registration, under the supervision of the Privy Council, which may direct it to amend its errors, if any, or supersede it if it persists in them.

The performance by the Council of its duties in regard to education are not at present in question, and it is therefore not necessary to enlarge upon this aspect of its work; but it has been necessary to set down the foregoing in order to show how large a part of its duties are connected with education, and why the members elected by the universities and appointed by the Crown have hitherto been members of the medical profession rather than laymen.

The Medical Council is also a Board of registration. In fulfilment of this function, partly by the force of necessity, and partly in virtue of the interpretation of the law by judges, it has become a professional court of justice, a domestic forum for the trial and determination of grave charges brought against registered practitioners in their professional capacity. By successive judicial decisions of the High Court and Court of Appeal, it has been laid down that in its procedure the Council, sitting as a tribunal, must as nearly as possible follow the forms and rules customary in other courts. But it has no authority to compel the attendance of witnesses, to administer oaths, or to call for the production of documents. It has only one judgment to give when a charge of misconduct is proved to its satisfaction—namely, "guilty of infamous conduct in a professional respect"; and only one sentence when judgment is given—namely, "erasure from the Register." From this sentence and judgment, given after proper inquiry and without malice, the High Court of Justice has pronounced that there is no appeal. In the earlier years of the Council's life, its decisions were frequently called in question before the higher courts of law. The results were on the whole fortunate, for while its actual findings as a professional tribunal were never reversed, the judgments delivered on these appeals not only defined, but in effect prescribed, the jurisdiction of the Council. They laid down its procedure, they interpreted broadly the meagre language of the Statute, and they settled beyond dispute the finality of its judicial decisions in all causes within its competence.

All the Act says is :—

"If any registered medical practitioner shall be convicted in England or Ireland of any Felony or Misdemeanour, or in Scotland of any Crime or Offence, or shall after due inquiry be judged by the General Council to have been guilty of infamous conduct in any professional respect, the General Council may, if they see fit, direct the Registrar to erase the name of such medical practitioner from the Register."

In 1863 the Lord Chief Justice and his colleagues of the Queen's Bench laid it down that this clause

"makes the Medical Council sole judges of whether a medical practitioner has been guilty of infamous conduct in a professional respect; and this Court has no more power to review their decision than they would have . . . of determining whether the facts had justified a conviction for felony or misdemeanour under the first branch of the section. . . . The Council is the tribunal to whom the Legislature has left the decision, as being the best judges in the matter, and this Court cannot interfere."

In another appeal Lord Justice Bowen declared that, provided "due inquiry" had been made by the Council—

"the jurisdiction of the domestic tribunal, which has been clothed by the Legislature with the duty of discipline in respect of a great profession, must be left untouched by Courts of Law."

Referring to the language of the Statute, Lord Justice Fry added :—

"'Inquiry,' and 'judgment,' and 'guilt' are all words which express and which are relevant to a proper form of judicial proceedings, and, therefore, although this body proceeds by different rules of evidence from those on which Courts of Law proceed, I cannot for a moment doubt that the Council were proceeding judicially, nor can I help adding that the manner in which the Council has proceeded on this inquiry, as on all other inquiries, shows that the Council are fully aware that they are performing judicial duties, and endeavour evidently to perform them in a very admirable manner."

These and like judgments settled the jurisdiction and the procedure of the Council sitting as a tribunal. The meaning and scope of the statutory verdict of the Council—"guilty of infamous conduct in a professional respect"—were given by the definition of the Court of Appeal in 1892.

"If it is shown that a medical man, in the pursuit of his profession, has done something with regard to it which would be reasonably regarded as disgraceful or dishonourable by his professional brethren of good repute and competency, then it is open to the Council to say that he has been guilty of 'infamous conduct in a professional respect.'"

The words, "infamous conduct," in fact, constitute a technical legal expression, defined by the Lords Justices to mean conduct "disgraceful or dishonourable" in a qualified professional man acting as such.

Procedure.

It will now be convenient to consider the way in which the Council carries out the duties imposed upon it under Section 29 of the Act, quoted above. It will be seen that the inquiries take place under two heads—viz., those relating to convictions, and those relating to "infamous conduct." To deal with all such cases, the Council has set up a special committee of five, which, assisted by the judicial assessor and the solicitor, acts the part of a grand jury, and considers whether there is prima facie evidence calling for a formal inquiry by the Council, or whether the circumstances suggest that a letter of warning may suitably be sent, or whether in the absence of relevant evidence no further action is necessary.

With regard to convictions, the Council, by the direction of the Home Office in England, and the corresponding authorities in Scotland and Ireland, receives from the police all over the kingdom reports of convictions of medical practitioners for any offence whatsoever. Some of these are trivial, such, for instance, as having the number-plate of a motor-car unlighted, or exceeding the speed limit. In these cases the Council, as a rule, takes no action beyond recording the fact of the conviction. Other cases may be those of convictions for drunkenness, and unless this conviction is for an offence committed when in attendance on a patient, or (say) when in charge of a motor-car, it is usual to issue a warning to the convicted practitioner. But should further convictions of the same sort be reported, the committee may think that they indicate a habit of intemperance which might be dangerous to the practitioner as a professional man and to the patients under his charge; in this case it might be decided that for the protection of the public the practitioner should be summoned to appear before the Council. There are other convictions of a still more serious nature, such as those of felony, in which, obviously, the Council ought forthwith to consider the matter in relation to the practitioner's professional status, and to the good repute of the Register.

If an allegation of "infamous conduct" is received, the Standing Orders, which are published by Messrs. Constable and Co., prescribe that the complaint must be formulated in writing, stating the grounds of complaint and accompanied by one or more statutory declarations as to the facts alleged. The practitioner, if the complaint is relevant to his profession, is then asked to give such explanation of the matter in writing as he may think fit, and the complaint and the answer thereto are brought before the committee. If, in their opinion, a prima facie case has been made out to justify an inquiry by the Council, the practitioner is in due course summoned to appear. In cases in which a practitioner has been under the censure of a judicial or other competent authority in relation to his professional character, as the result, for instance, of an inquiry into professional conduct held under the National Insurance Acts, or of a trial in the civil courts, statutory declarations by the authority in question are not required; but the depositions, judgments, and other relevant documents, are officially supplied, and in other respects the same procedure is followed by the Council.

When the inquiry takes place, the complainant or complainants may be represented by counsel or solicitor, or in the event of there being no personal complainant or lawyer representing him, as for instance in the case of a criminal conviction, the facts may for convenience be laid before the Council by its own solicitor, who formally proves the conviction and informs the Council of the circumstances as reported. The practitioner is entitled to be, and as a rule is, present; and he also may be represented by counsel or solicitor. The hearing is in public, witnesses are called and examined and cross-examined, as in

the ordinary courts of law. Questions may also be put to witnesses by members through the chair. The judicial assessor is always present to assist the Council in regard to any points of law or procedure which may arise, and if there is a conflict of evidence, he, as a rule, sums up and indicates the legal weight to be attached to each part, in the same way as a judge sums up for a jury. When a criminal conviction has been proved, it has to be accepted as a fact, and the Council does not "retry" the charge which led to the conviction, any more than, according to Lord Chief Justice Cockburn, the High Court would do; but it is willing to hear anything that the accused practitioner may have to say, or may desire to be said on his behalf, in regard to the actual gravity of the offence of which he was found guilty, and in particular to its relevance to his profession, as affecting his position on the Medical Register. At the conclusion of the hearing the public and the parties withdraw, including the Council's solicitor, if he has been called on to lay the actual facts before it, and the Council then deliberates upon the case in camera. It decides first, whether sufficient evidence has been produced to enable it to come to a decision on the facts alleged; secondly, whether the conviction or facts alleged in the charge have been proved to its satisfaction; thirdly, whether it will proceed to judgment at once, or postpone it to a future date; and fourthly, if it does not postpone judgment, whether, on the facts proved, the name of the practitioner is to be erased on the ground that he has been convicted of a grave offence, or is guilty of "infamous conduct in a professional respect." A full shorthand note of the whole proceedings is taken, and copies are accessible if they are required, either by the Council itself or by any competent authority.

The practice of suspending judgment to a later date is one which has been gradually evolved by the Council. The Act gives one penalty only—viz., that of erasure—but there are cases in which, when a practitioner has, for instance, been repeatedly convicted of drunkenness and promises amendment, the Council suspends judgment in order that he may have time to show that his word is good, and in this event the practitioner is summoned to appear in 6 or 12 months' time and to produce evidence as to his good conduct in the interval. At the adjourned hearing, if the evidence of conduct is satisfactory, the Council, although it may have found the conviction or the facts, as the case may be, to have been proved, does not deem it necessary to proceed to judgment or to direct the erasure of the name from the Register, and the accused practitioner is "discharged with a caution." The minutes of the Council record many examples of such "cautions."

The Act gives the Council no explicit power of suspension, nor, in view of the fact that practice by unregistered persons is not prohibited, would mere suspension from the Register be of any practical value to him. A practitioner's name is either on or off the Register. If it is on the Register, he is entitled to all the privileges of registered persons, and these could not be suspended in the case of an individual without the actual erasure of his name. He must have all or none.

A practitioner whose name has been erased may, under the conditions set forth in the Standing Orders, apply to have it restored; and, if in the opinion of the Council it will not be prejudicial to the public interest to grant his request, his name is thereupon replaced upon the Register. It may here be remarked parenthetically that the Council has no jurisdiction over the licensing bodies in regard to the withdrawal, under their by-laws, of their qualification from one of their own members or licentiates. Certain bodies, for instance many of the universities, have no statutory power to withdraw their degrees once they have been conferred. Others, such as the Royal Colleges of Physicians and Surgeons, have power, independently of any action by the Council, under their own by-laws to suspend or expel their members for offences volving a breach of their particular regulations or of the practitioner's declaration on admission. When a practitioner applies for restoration it is essential, in order to conform to the law, that he should actually be in possession of at least one qualification, for restoration is in effect re-registration. If he is not, the Council has no power to restore his name only, for he is, in fact, unqualified. He must therefore first apply to the bodies whose qualifications he formerly held, asking to have at least one qualification restored to him. In this matter the licensing bodies have necessarily complete autonomy. They are not bound either to await or to follow a decision by the Council. It is the custom of the Council from time to time to issue warning notices to practitioners in regard to points of professional conduct, and it has been the practice not to issue such a warning until a number of cases of a particular form of misconduct have been brought before the Council, so that it is clear that a state of things is becoming prevalent which is contrary to the public interest. For instance, in certain parts of the country it was formerly customary for a qualified man in large general practice to employ a number of unqualified persons as his assistants. These, as they acquired a certain amount of rule-of-thumb experience, were gradually entrusted more and more with the sole care of patients. The practitioner sometimes did not see the patient until it was time to sign a death certificate in order to avert an inquest. Individual cases of gross abuse were one by one brought before the Council and condemned. Others, in which serious forms of evasion of the law were attempted, followed upon these; and as they arose these ingenuities were severally met and dealt with. At length it was made clear to those who clung to the bad tradition that their practice was too dangerous to be profitable, and that the "unqualified assistant" must go. Having accumulated a sufficient body of experience regarding the mischief which had to be remedied, the Council summed up all in a "warning notice" respecting the professional offence of "covering." All qualified practitioners were notified that the abuse of their qualifications, whereby an unqualified person was enabled to mislead the public and to treat patients as if he were qualified, under "cover" of his qualified employer or employee, who might sign for him his medical certificates, and otherwise enable him to evade the law, was in its nature fraudulent and dangerous to the public health, and that such an offence rendered them liable to be judged guilty of "infamous conduct." The result was remarkable. Unqualified assistants were dismissed wholesale, often no doubt at the cost of some hardship to individuals, but in the end for the good of the public and the profession alike. The evil, from being almost endemic in particular districts, became sporadic, and has now almost passed away. Other forms of "covering," such as those by which uncertified women were enabled to practise as midwives, and other unqualified practitioners were enabled to procure medical certificates from the qualified, were one by one dealt with as they arose. Private "interests" must not prevail against the interest of the public.

More recently the practice of advertising, whether directly or indirectly, for the purpose of obtaining patients or promoting a practitioner's professional advantage, was brought before the Council in connexion with some particularly flagrant cases; and each case had to be judged on its merits—or demerits. The character of the advertising varied. In some cases articles were inserted in the press, either by the practitioner himself or through the medium of complaisant journalists, affirming directly or by implication the superior methods of treatment of a practitioner, who desired for gain to attract patients to himself at the cost of his self-respect and the respect of others. If this procedure were unchecked, the practitioner who had fewest scruples, in praising himself and his wares, would reach the widest public, and extend his practice without any guarantee that his merits were in fact superior. It was discreditable to his profession, and contrary to the public interest,

that a qualified man should thus adopt the methods of the unqualified self-advertising and self-praising practitioner of medicine or surgery. Accordingly the Council warned the profession against conduct of that kind, and, where a formal and duly attested complaint of such conduct is received, it holds an inquiry into the alleged facts. When the inquiry elicits evidence of deliberate bad faith, or of wilful exploitation of the public for gain, the offence of "unprofessional advertising" is naturally held to be aggravated.

To sum up, what has been written in regard to the disciplinary procedure of the Council, it is clear, first, that the Council does not itself initiate proceedings, does not itself employ detective methods, and does not itself act as prosecutor, against registered practitioners. It is a statutory court of justice, and takes action only in cases of criminal conviction, or of judicial censure, officially brought to its notice, or in cases of formal complaints, supported by prima facie evidence, brought before it by responsible persons or bodies. Secondly, its judicial procedure is based as nearly as may be on that obtaining in the Law Courts. When a charge is made the practitioner has every possible opportunity of defending himself; and should his name be erased from the Register, it may after a lapse of time be restored thereto, if that can be done with safety to the public. And thirdly, it is now unusual for complaints involving a charge of "infamous conduct" to be lodged in regard to any matter on which the Council has not already issued a general warning to the profession and to the public.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Proposed Insurance Legislation.

A PREVIOUS letter outlined proposed French legislation on obligatory insurance against sickness, old age, and unemployment. The French medical profession has not been favourably impressed with the social insurance in vogue in England and in Alsace and Lorraine. Objection is taken to the frequent demands for needless consultations and the insufficient payment of physicians. After making all necessary allowances, the introducer of the new French law assigns 1·20 per cent. of the basal workers' salary of 5000 francs per annum to cover pharmaceutical, hospital, and medical expenses. Jayle finds that of the 60 francs thus forthcoming the physician is to receive 27 to 30 francs for seven days' medical service, and considers that no country provides adequate compensation for the physician, although the sums paid in England are twice those proposed in France. Insurance practice must remain imperfect and poor unless physicians unite to exact a payment which they consider suitable. If their demands are not made unitedly it may be that clinics will multiply, but their medical personnel will certainly be inferior. The result will be overloading of the free public hospital service, and the proposed law will not ameliorate present conditions. If physicians' unions, or *syndicats*, support what are considered just medical demands, the difficulty will be to compromise between these demands and the funds really available from the insurance treasuries. The question is very difficult in all its aspects.

Tuberculosis in Bakehouses.

In discussing night-work in bakehouses the advocates of reform and their opponents have advanced all sorts of medical arguments, based for the most part on statistics which are positively fantastic. Some have said that tuberculosis affects 70 per cent. of workers in bakehouses, whereas others have estimated the rate at only 5 per 1000. MM. Jacques Parisot and G. Richard have recently put before the Académie de Médecine some definite statistics which are particularly interesting now that the Senate is discussing a Bill for the suppression of night-work. From information collected in social hygiene dispensaries from 1921 to 1925 they have come to the conclusion that the mortality from tuberculosis amongst workers in bakehouses at Nancy works out at 10 per 1000, whilst the mortality for the rest of the population of the town varies between 2·5 and 3 per 1000. It is instructive to compare these figures with those obtained in an allied trade—the pastry-cooks—in which there is said to be no mortality and a morbidity of less than 1 per cent. The reason for the difference seems to be that bakehouse work lies outside present social regulations (night-work, no regular weekly day off), and that baking is done in unhygienic conditions which are often deplorable. These factors favour the onset of tuberculosis amongst the workers. A significant fact is that two-thirds of the people found suffering from tuberculosis—many of them with extensive lesions and tubercle bacilli in the sputum—go on with their work as usual. Apart from any possible risk of contaminating bread before it is cooked, there is obviously a certain danger from the inevitable soiling of bread as it is taken out of the oven into a dusty atmosphere saturated with bacilli. Mr. Cazeneuve, of Lyons, has indicated another point of importance to the trade which has received insufficient attention. It is all very well, he says, to take account of the suppression of night-work and the eight-hour day, but it must not be forgotten that the substitution of mechanical kneading for hand kneading would be a great improvement—an improvement as much in the interests of the worker as in that of the consumer.

Fitness of Railway Employees.

A report on the physical examination of railway employees has been presented by Dr. Guillain, professor of neurology at the Salpêtrière. Guillain suggests that all French railway systems require a standard physical examination for the admission of employees to the service. Each employee should be examined every five years to the age of 50, and every three years after that age; vision should be examined every two years; cardiac patients should not be accepted for service; and employees addicted to alcohol should be discharged.

New Technique in the Treatment of Lupus.

Dr. Aurégan, of Lannion, Brittany, has just presented to the Société de Dermatologie et Syphiligraphie a method for treating lupus which he has been testing since 1904. The method is new mainly in its special technique, but Prof. Sabouraud declares that it has been proved of great value. The lesions are anæsthetised and deeply curetted, and the wound is filled with an ample supply of very finely powdered potassium permangante crystals. The crust formed by the permanganate is removed in 15 to 20 days, cure being perfect in ideal cases. Uncured traces remaining may be eliminated by repetition of the treatment. All cases thus treated by Aurégan have remained cured and no case has needed more than three applications of the method, which is commended for its sureness, simplicity, and inexpensiveness.

Pain in the Hip.

According to Dr. Calot, of Berck-sur-Mer, the cause of pain in the hip, at all ages, is very often entirely misunderstood. When it comes on in young children it is put down to coxalgia; in adults and old people it is often attributed to sciatica, lumbago, rheumatism, rheumatoid arthritis, and the rest. This observer, however, claims to have demonstrated that 90 times out of 100 above the age of 20, and in nearly 50 per cent. of cases below that age, the functional disturbances noticed are really due to a slight congenital abnormality of the form and adjustment of the two bones of the hip—abnormalities which have been present without sign or symptoms for 10, 20, or 60 years. They remain latent so long as there is no excessive strain, but if functional equilibrium is destroyed at any age by the effects of fatigue or a fall or some debilitating disease symptoms such as pain and limping are the result.

Clinical and radiographical examination make it possible, he says, to identify the real cause, which is, of course, the first step towards rational treatment.

A New Anti-Tuberculosis Vaccine.

A vaccine presented by M. Grimberg to the Société de Médecine de Paris seems useful in the treatment of fistulous lesions. It is said to be colloidal and prepared by treating bacilli with very fine iron filings and the electric current. A two years' trial in some of the Paris hospitals appears to indicate that it merits further test.

Prof. Tiffeneau has been unanimously chosen to succeed Prof. Richaud in the chair of pharmacology at the Paris Faculté de Médecine.

Prof. Sébileau, oto-rhino-laryngologist at the Hôpital Lariboisière, has been made Commander in the Légion d'Honneur.

UNITED STATES OF AMERICA.

(FROM AN OCCASIONAL CORRESPONDENT.)

Death-rate in the United States.

THE national death-rate in the United States has been estimated by the Commerce Department of the Government, at 11·9, on the basis of figures for 1924, as compared with 12·8 in 1923, 11·8 in 1922, and 11·6 in 1921. The figures cover the entire death registration area of the country, which accounts for about 88 per cent. of the population. Heart disease was the chief cause of death in the general registration area in 1924, accounting for 176,671 fatalities. This was a slight increase over the figures for the previous year. Cancer also took a heavier toll in 1924 than in 1923, 91,941 deaths being reported. Tuberculosis, on the other hand, showed a decline, the deaths from this disease numbering 89,724 in 1924 as compared with 90,782 in 1923. Cerebral hæmorrhage, pneumonia, and nephritis were other important factors in the mortality figures, while of the 75,745 accidental deaths motor-cars alone caused 15,528, compared with 14,411 in 1923. Both suicides and murders increased; there were 12,061 suicides in 1924 as against 11,257 in 1923, and 8420 murders as against 7878. In another statistical study the department has reported a further increase in deaths due to motor-car accidents in the principal cities of the United States. The total for the four weeks ending Dec. 5th last was 624. In New York proper, in 1925, street accidents caused 392 out of a total of 596 violent deaths, which includes 106 deaths by shooting. According to the reports of the traffic court the magistrates dealt with 82,252 cases, and 238 persons were charged with driving motor-cars when intoxicated.

The Dreams of Children.

At the meeting of the American Psychological Association on Dec. 31st last Miss Phyllis Blanchard gave some results of tabulating the dreams of 300 children. Of the children examined 189 were able to tell their dreams, and of these the large majority were between the ages of 6 and 14 years. The intelligence of the group was fairly normal. The dreams were grouped according to the relative frequency of the subjects and according to motivation. The greatest number of dreams, 15·3 per cent., concerned the children's parents, and this number represented more than one-fourth of the dreamers. Next in frequency came dreams about animals with 14·3 per cent., then dreams of fear, of play, of falling, of robbers, and of death. As for motivation, 46·3 per cent. of the dreams seemed to represent wish fulfilments and 40·6 per cent. were apparently caused by fear; while 9·5 per cent. were a result of mental conflicts. Moving pictures were recorded as the cause in 6·3 per cent., and only 5·7 per cent. were attributed to sex.

The Span of Life.

At a recent meeting of the American Sociological Society Dr. Harnell Hart, of Bryn Mawr College, predicted that the average length of life of human beings born in A.D. 2000 would be 100 years. Dr. Hart pointed out that the average expectation of life increased from 21 years in 1850 to over 50 years in 1910. Since 1850, he said, the average gain per decade had been three and two-tenth years, a rate of gain which would be maintained and even accelerated. In A.D. 2000 he thought the span would be lengthening at about the rate of eight years per decade, and therefore the expectation of life at birth would have reached about 104 years. This meant that the average person would live to be 104, and obviously many persons must live to be 200 or older in order to maintain such an average.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

The Medical Register.

Mr. James Burke, Minister of Local Government and Public Health, moved last week the first reading of the Medical Bill. It is proposed to continue the authority of the General Medical Council in the Free State for a period of six months from Feb. 21st, and to give power to the Executive Council to continue it for a further period of six months if so desired. The Minister said that it was necessary to pass the Bill if the whole position of the medical profession in this country was not to go into chaos. Though at present the matter was not finally settled, he thought that they had hit upon a plan to preserve the existing rights of students in Ireland without in any way derogating from the status of the country under the Treaty. He gave no details of his plan, but it is understood that some of the medical representatives made a suggestion that a council should be established with power to regulate practice in the Free State. This would perform its duties side by side with the General Medical Council and without interference from it. By such a scheme students taking their qualifications in the Free State could put their names on either or both registers as they might think desirable. If they wished to practise in Great Britain they would, of course, enter as heretofore on the General Register.

Vaccination in Ireland.

At a meeting of the General Council of the Royal Academy of Medicine in Ireland it was resolved that "in view of the outbreak of small-pox in certain parts of England, following on the decline of vaccination in that country, the President and Council of the Royal Academy of Medicine in Ireland, having had their attention drawn to the decline of vaccination in this country, deem it their duty to urge the necessity for vaccination of all young children, and of immediate revaccination in the case of adults who are likely to come in contact with cases of small-pox." A similar resolution was passed recently by the Council of the Irish Medical Association.

MEDICAL TREATMENT AT SEA.—Mr. W. Peel, presiding at a meeting of the Liverpool, Bootle, Waterloo, and District War Pensions Committee on Jan. 12th, mentioned a ruling by the Ministry of Pensions in the case of an ex-Service man now employed as a seaman. The Ministry admitted that he required medical treatment, one of their own medical men having certified to that effect; but said that he could obtain it from his own panel doctor, and that this would not prevent him earning his living. They would not give him a treatment allowance. The Committee wrote asking whether it was the duty of a seaman to change his occupation when he applied for treatment. "Certainly not; the treatment can be given to him perfectly well by the doctor on board ship." The Ministry of Health were informed that, as the result of inquiries in the port, it was extremely doubtful whether shipowners or captains would employ a seaman knowing that he would have to be medically treated on board.

Public Health Services.

SOME ANOMALIES IN MEDICAL CERTIFICATION.

INSURANCE practitioners are sometimes in doubt of their correct course in the certification of an insured person who has been treated in hospital and who remains incapable of work on returning home. The practitioner sees the case for the first time when the patient returns home; should he give a "first" certificate or an "intermediate" or "continuation" certificate to follow on the certificates already given at the hospital? Obviously, if the insured person is not to lose two or three days sick benefit—and there is no reason why he should—the certificate must be an "intermediate" certificate. The case is similar to that of an insured person who changes his insurance doctor in the course of an illness. In this case the transfer may be due to the fact that the first practitioner has refused further certificates. We know of cases in which the second practitioner has given a "first" certificate under these circumstances.

Agents of some of the societies insist on a "final" certificate being given in cases of pregnancy when labour takes place. Here it is obvious that the ordinary "final" certificate cannot be used. The fact of labour taking place and the application for maternity benefit with which a signed statement of the date of the confinement must be sent is sufficient evidence of the date on which the sick benefit must cease.

Practitioners are frequently notified of their insured patients having "ceased to be insured." Where the practitioner knows that the insured person referred to is actually at work the explanation may be that the notice refers to a duplicate entry which has been discovered and which is being cancelled. But in other cases the approved societies in notifying the insurance committees appear to overlook the wide limit which was granted to insured persons by the 1920 Act. Under this provision the insured person is entitled to medical benefit for 12 months after the end of the year in which he falls into arrears. This provision was meant to prevent the insured person from being disentitled to medical attendance by reason of a period of temporary unemployment. So many cards are asked for by the Insurance Committee for this reason that the relationship between the practitioner and his insured patient is unnecessarily interfered with to the annoyance of both parties.

A number of insurance practitioners would like to have an answer to the following question: When an insured person is said to be in arrears to the amount of, say, 5*s*., why is it necessary to stop an equivalent sum of his sickness benefit every week?

PORT SANITARY AUTHORITY.

The annual report of the Newport (Mon.) Port Sanitary Authority by the medical officer of health, Dr. J. Howard-Jones, tells of but few cases of infectious disease seen during 1924. It is desirable, he states, that suspected ships should be moored and examined in Barry Roads, but this procedure has not yet been sanctioned by the Ministry of Health. Little meat or other provision imported was found unfit for human consumption. There came to notice 101 cases of venereal disease in British subjects and 74 in foreign seamen.

Baits, traps, ferrets, and fumigation accounted for 6583 rats, some 70 per cent. of which were females; 97 per cent. of the rats on board ship were black, whereas 99 per cent. of those about the docks were brown. None were found infected by plague. Less than six were found dead per hundred baits distributed, and in seven ships fumigated the average number of bodies found was 74.

Inspection was made of 2428 ships, of which 407 were found defective and had notices issued to them calling for the abatement of nuisances. These included dirty forcastles, 147; foul or defective w.c.'s, 141; defective lighting or ventilation, 118; accumulation of refuse on deck, 89; defective stoves and heating apparatus, 72; food-lockers, none, or defective, or dirty, 32; leaking decks, 23; living spaces verminous, 18; defective cable casings or hawse pipes, 18; stagnant water on or under floors of living spaces, 14; water impure or storage dirty or defective, 10; insufficient table space or seating, 8; w.c.'s used as storerooms, 6; defective bulkheads, 5. Of dirty or verminous beds, 1269 were destroyed. Those general and particular remarks of the report which concern the sanitary condition of ships and the diseases of seamen have already been commented upon in our columns.[1]

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED JAN. 23RD, 1926.

Notifications.—The following cases of infectious disease were notified during the week:—Small-pox, 362 (last week 341); scarlet fever, 1818 (last week 1717); diphtheria, 1005; enteric fever, 39; pneumonia, 1193 (last week 1337); puerperal fever, 51; cerebro-spinal fever, 9; acute poliomyelitis, 3; acute polio-encephalitis, 1; encephalitis lethargica, 31 (last week 67); continued fever, 1; dysentery, 8; ophthalmia neonatorum, 113. There were no cases of cholera, plague, or typhus notified during the week.

Of the 362 cases of small-pox, 26 (last week 60) were reported from the county of Derby, 19 of them from Derby C.B.; 175 (last week 143) from the county of Durham, 47 of these from Gateshead C.B., 9 from South Shields C.B., and the remainder from widely scattered urban and rural districts and including 44 from Blaydon, 20 from Chester-le-Street R.D., and 23 from Easington R.D.; 1 from the county of Lancaster; 1 from Lincoln (parts of Lindsey); 53 from the county of Northumberland (last week 21), including 6 from Newcastle-on-Tyne and 20 from Ashington; 8 from the county of Nottingham (last week 16); 6 from the East Riding of Yorkshire (Kingston-upon-Hull); and 92 from the West Riding (last week 90), of which 79 (last week 77) occurred in Rawmarsh and 2 in Leeds.

Deaths.—In the aggregate of great towns, including London, there was 1 death from enteric fever, none from small-pox, 109 (63) from measles, 5 (3) from scarlet fever, 66 (4) from whooping-cough, 50 (16) from diphtheria, 57 (19) from diarrhœa and enteritis under 2 years of age, and 87 (11) from influenza. The figures in parentheses are those for London itself. The recent diminution in the number of deaths from influenza is not maintained, the figures for the last three weeks, working backwards, being 87, 81, and 114.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

Surg. Lt.-Comdr. L. F. Strugnell to be Surg. Comdr.

The following appointments have been made:—Surg. Comdrs.: D. P. H. Pearson to the *Champion*; A. G. Malcolm to the *Pembroke*, addl., for R.N. Barracks, Chatham, and as specialist in ophthalmology; and T. E. Blunt to the *Spenser*, temp. Surg. Lt.-Comdrs: W. I. Gerrard to the *Egmont*, addl., and to the *Egmont* for R.N. Hospl., Malta, and as specialist in bacteriology; K. A. I. Mackenzie to the *Britannia*, for R.N. Sick Quarters, Dartmouth; J. F. Haynes to the *Vivid*, addl., for Devonport Dockyard; O. J. M. Kerrigan, S. R. Johnston, J. T. Wylie, J. F. Ainley, F. G. Hunt, H. Hurst, J. R. Brennan, and R. W. Nesbitt to the *President*, addl., for five months' course of instruction.

Surg. Lt. (short service).—P. J. A. The O'Rourke transferred to the permanent list.

ROYAL ARMY MEDICAL CORPS.

Maj. A. L. Otway is restd. to the estabt.

Majs. C. T. Edmunds (granted the rank of Lt.-Col.) and A. S. Williams ret. on retd. pay.

Maj. B. G. Patch to be Lt.-Col., vice Lt.-Col. J. H. Robinson to retd. pay.

Capt. S. E. Elphick to be Temp. Capt. and temporarily relinquishes the rank of Capt.

Temp. Capt. A. Wilson relinquishes his commn. and retains the rank of Capt.

[1] THE LANCET, 1925, ii., 1347.

TERRITORIAL ARMY.

Capt. A. J. Gibson to be Maj.
Lts. T. C. MacKenzie and J. Cohen to be Capts.
Lt. D. G. Coutts (late T.A. Res. of Off.) to be Lt.
2nd Lt. A. G. Ogilvie (late R. Tank Corps) to be Lt.

ROYAL AIR FORCE.

L. I. Hyder is granted a short service commission as a Flying Officer for three years on the Active List.

Flying Officer S. G. Gilmore is promoted to the rank of Flight Lt.

Flying Officer T. Glynn is transferred to the Reserve, Class D.2.

AUXILIARY AIR FORCE.

J. D. Driberg to be Flight Lt., No. 601 (County of London) (Bombing) Squadron.

INDIAN MEDICAL SERVICE.

The King has approved the retirement of Lt.-Cols. J. H. Hugo and R. McL. Dalziel.

DEATHS IN THE SERVICES.

Inspector-General of Hospitals and Fleets, Thomas Browne, R.N., whose death occurred at the age of 84 on Jan. 29th at Weymouth, graduated M.D. R.U.I. with honours and the gold medal in 1862. In the same year he obtained the L.R.C.S. Edin. and joined the Royal Navy as assistant surgeon in 1863. He was promoted to staff surgeon in 1876, to fleet surgeon in 1883, Deputy Inspector-General in 1893, and Inspector-General in 1899, in which year he retired. For some 14 years he served at the R.N. Hospital, Yarmouth, where he was very popular with the patients and their relations. From 1894 to 1897 he was in charge of the R.N. Hospital, Bermuda, and from 1897 to 1899 second in charge of the R.N. Hospital, Plymouth. A keen golfer, he assisted in the formation of the Great Yarmouth Club, of which he was the first honorary secretary. He married Miss Agnes Robertson Dall, daughter of James Dall, J.P., of North Berwick, in 1871, who survives him with a son and five daughters.

Lt.-Col. William Wippell Pope, C.M.G., R.A.M.C. retd., who died on Jan. 31st at Bournemouth, aged 68, received his first commission in 1881 and served with the Egyptian Expedition of the following year, and was at the battle of Tel-el-Kebir (medal with bronze star). In 1888 he took part in the operations in Zululand and served during the operations on the N.W. Frontier of India in 1897–98. He was also with the Tirah Expedition Force (medal with clasp), and served in the South African War, and was present at the defence of Ladysmith (Queen's medal with clasp). He reached the rank of Lieut.-Colonel in 1901 and retired two years later.

Correspondence.

"Audi alteram partem."

THYROID GLAND AND CALCIUM THERAPY.

To the Editor of THE LANCET.

SIR,—In connexion with Dr. Geikie Cobb's letter on the above subject, and its application to the treatment of chilblains, may I invite the opinions not only of my dermatological colleagues, but also of other medical men, as to the value of calcium salts alone, or of a combination of these with parathyroid gland, in the treatment of patients with a feeble peripheral circulation and chilblains? Most of my patients who come to me with chilblains have already taken calcium lactate over a long period without striking benefit; it is true that many of them have taken it after meals, whereas, as Dr. Arthur Luff pointed out, it should be given about an hour before, but, even when this error is corrected, the results in my experience are seldom good. As for parathyroid gland, in spite of all the claims that have been made for it and of a conscientious personal trial in cases of chilblain-circulation, varicose and other chronic ulcers, and urticaria, I have never convinced myself that it had any beneficial effect whatever when given by the mouth.

Chilblains are admittedly far commoner in the female than in the male sex, and occur chiefly, but not exclusively, in girls and women belonging to a certain type, which deserves a monograph to itself. This type is well known to dermatologists and is seen commonly in girlhood, although it can be recognised at a later age, when, however, its manifestations are, as a rule, less obvious. Its subjects are usually fat and œdematous-looking and their legs are, perhaps, their most characteristic feature. These are coarse and unshapely and blue from vascular stasis, most marked in the lowest third, which is often icy cold to the touch; there is hyperkeratosis at the pilo-sebaceous orifices—*keratosis pilaris*—around each of which is seen a bluish halo of stasis; the lanugo hairs are often long and coarse, and the skin as a whole is harsh, feels thickened, and cannot be pinched up from the underlying subcutaneous tissue. The same vascular stasis and the *keratosis pilaris* are also seen on the extensor surfaces of the upper arm. Dr. H. MacCormac and Dr. Parkes Weber recently drew attention to these patients in describing "a peculiar erythema of the legs," and it has been suggested that the wearing of thin or openwork stockings is an aggravating cause of the vascular stasis. Where this is most evident—viz., on the postero-external surface of the lowest third—actual chilblains often occur, and also, if the patient be tubercular, the nodules of Bazin's erythema induratum; in fact, it is doubtful if the latter is ever seen except in patients of this type. I agree, however, with Dr. Guy that in them nodules similar to those of erythema induratum may occur from embolism of bacteria other than the tubercle bacillus—e.g., *B. coli* and streptococci.

The ætiological factors responsible for the production of this type afford plenty of scope for speculation. That there is a disturbance of the endocrine-sympathetic system would appear likely. Thus, as has been said, females are far more often affected than males, and my experience is that in most patients there are menstrual irregularities; menstruation is usually late in beginning, often irregular and scanty, and not uncommonly several periods are missed altogether. Heredity is undoubtedly a factor of importance; frequently the history is volunteered that the mother was similarly affected when a girl, and I have been several times consulted by two or three sisters for the same condition. I have thought that psoriasis is commoner in girls of this type than can be explained by mere coincidence; when it does occur, the psoriasis patches predominate on the legs below the knee and to a less extent on the extensor surface of the upper arm, the body often being completely free, and it is common in these situations for the eruption to be follicular, the mouths of the pilo-sebaceous follicles, already the site of *keratosis pilaris*, being encircled by a little halo of psoriasis. As regards the calcium metabolism of these patients Dr. W. W. Payne kindly made investigations of the blood-calcium for me in a few cases, but the results were inconstant; no striking diminution either of the total or ionised calcium was found in any case, and in some the figures were above normal.

I have found the oral administration of iodine in large doses, either alone or in combination with thyroid gland, far more efficacious than anything else in these patients, not only as regards the acroasphyxia and chilblains, but also as regards their general health and sense of physical fitness. I am, of course, aware that Sir Arbuthnot Lane would attribute the clinical picture I have briefly sketched entirely to intestinal auto-intoxication; it is true that in the few cases that have been completely investigated very marked delay in the colon was found, and very possibly auto-toxæmia may be an important factor, but it cannot, I think, be the only one.

I am, Sir, yours faithfully,

Devonshire-place, W., Feb. 1st, 1926. H. W. BARBER.

THYROID GLAND AND CALCIUM THERAPY

To the Editor of THE LANCET.

SIR,—With regard to chilblains Dr. Cobb uses some work of Dr. Vines and mine to strengthen an argument which would have had more force if his major premise had been correct—namely, that chilblains are associated with calcium deficiency. We have shown that many diseases are associated with Ca. deficiency, but we have expressly stated that the cases of chilblains had normal blood calcium. Two only were examined, but these were sufficient. I do not know who originally stated that chilblains had Ca. deficiency; I can only assume that the blood of a person suffering from ulcerating chilblains was examined. In that case there might have been Ca. deficiency due to some septic source which would render the chilblain liable to break down. In the same way many people have varicose veins, but they do not all get them thrombosed or ulcerated. But if there is a source of sepsis in the system the blood will become Ca. deficient and the vein may inflame or break down into an ulcer. In such a case giving parathyroid will overcome the deficiency and the lesion will heal. There is no necessity to add calcium; there is always the little required in the food; it is only a question of its proper assimilation and ionisation. Chilblains are very deceptive things to treat; under any remedy a spell of warmer weather will improve them and the remedy is given the credit. Personally I was sure, before Dr. Vines had found out for me that chilblains per se were not Ca. deficient, that the administration of calcium salts did no good, and I have never tried parathyroid. On the other hand, thyroid has seemed to me to lessen the congestion. But some years ago a consul home for a holiday from the Caucasus asked me to give him some cacodylate of soda injections for his chilblains, an Armenian doctor having previously cured him with that remedy. I have always used it since with sure and happy results. The effect lasts for some months, and given as a prophylactic at the beginning of the winter, the patient is free for the year. I give three injections, each of gr. ½ made up in ampoules, at intervals of about two days.

I am, Sir, yours faithfully,

W. R. GROVE.

St. Ives, Huntingdonshire, Feb. 1st, 1926.

PERCHLORIDE OF MERCURY IN ACUTE BACTERIAL INFECTIONS.

To the Editor of THE LANCET.

SIR,—With reference to the article by Prof. Dudgeon in THE LANCET of Jan. 23rd, I venture to send you a note on similar work which we have been carrying out at the West London Hospital, St. Mary Abbots Hospital, and other places, and which we had intended to publish fully when sufficient cases had been collected to make it of value. Dr. Dudgeon has been able to deal with a large number of cases, with results that are as satisfactory as we would have anticipated from our experience.

Two cases of pyæmia were shown at the West London Medico-Chirurgical Society in 1924 and 1925 which had been treated with intravenous injections of perchloride of mercury with immediate and satisfactory results, inasmuch as the blood cultures became sterile at once and there was rapid recovery. In the second case panophthalmitis had necessitated the excision of the eyeball before treatment was started. Other injections had been given in both these cases previously with no effect. These cases appear in the *West London Medical Journal* in the reports of the Proceedings. Since then we have used the same injections in various infective conditions but our conclusions are not yet drawn. In several cases of subacute infective arthritis the condition appeared to subside with recovery, in others there was no result.

This winter several cases of pneumonia seemed to improve directly after injections, and the resident medical officers at the hospital have formed a high opinion of its value in pneumonia, but I am of opinion that it is in the so-called influenzal types that it is of more value. In the true lobar type due to the pneumococcus I am not convinced of its efficacy. But then in streptococcal infections in general, and particularly in infective endocarditis, we have been disappointed, and it is most encouraging to read the report of Dr. Dudgeon's success in a case of septicæmia associated with a hæmolytic streptococcus. In acute rheumatism there has been no improvement after several injections.

It is difficult to attempt to explain the action of so small a dose as 1/32 to 1/16 gr. of perchloride when diluted in the mass of body blood, but an interesting point appeared to come out of blood cultures made by Dr. Elsworthy on a case of infective endocarditis. Though the disease was not affected by the injections he noted that after each there was a distinct delay in the growth in the culture flasks. We have had no ill-effects of the injections, which have been given in 1 c.cm. of saline.

I am, Sir, yours faithfully,

JULIUS BURNFORD.

Devonshire-place, W., Feb. 1st, 1926.

OCCUPATIONAL THERAPY.

To the Editor of THE LANCET.

SIR,—When I was young my little friends and I were wont to play a game in which, during a hunt after a hidden object, we were told we were getting "warmer and warmer" the nearer we approached the desired goal. It has struck me since that life is composed almost entirely of such a game, with this difference—that even if one knows for certain where the object is hidden, very rarely does one dare to shout "warmer and warmer" the nearer someone approaches it.

The discussion on Occupational Therapy by the Society of Superintendents of Tuberculosis Institutions (THE LANCET, Jan. 23rd, p. 182), which unfortunately I was unable to attend, seems to me so well to illustrate the game of our childhood, that I hope I may be forgiven if I make bold, even at the risk of being thought indiscreet, to shout "warmer and warmer" to my colleagues, for it would be hard to imagine a meeting which could pour forth such approbation of village settlements for the tuberculous, such an appreciation of the principles underlying them, without recognising the end of the quest.

I cannot, therefore, refrain from adding a few remarks which may help in the elucidation of a difficult problem. In the first place, it is well to have clearly fixed in our mind the kind of object for which we are searching. When, for example, Dr. J. E. Chapman states that occupational therapy signifies a means of returning the patient "to his ordinary conditions of life mentally and bodily sound," he is enunciating a fundamental principle, and when he adds, "but employers did not want them after discharge, and they had no notion of the commercial side of business and so failed alone," he is adding the next layer of bricks to the structure. Finally we come to the culminating point: "Many of them broke down more because of the *difficulties and worries of employment*"—that is where we are brought face to face with the economic problem. And this is emphasised by Lieut.-Colonel J. R. Lord, who remarks that "a patient would take more interest in his work if it were *useful and remunerative* .... Often their old occupation was gone and they had to face a new world and conquer it as best they could."

That an occupation should be useful will not suffice. Dr. Jane Walker gives a long list of admirably useful occupations which, with the utmost enthusiasm, she has tried at Nayland, and which she says have failed, but—and this is the significant fact—"when the Government scheme for ex-Service tuberculous men was instituted" various trades were commenced, and these "were still going on very successfully."

Why? Because those men were not financially embarrassed; their economic problems had been solved by the pension.

A similar principle is recognised by Dr. Esther Carling when she informs us how successful "the employment of ex-patients in institutions" has turned out to be; that is, employment under sheltered conditions—the germ of the village settlement—employment at an occupation which is already known to the ex-patient, or one nearly allied to it. The economic problem having been solved, success is attained. The sheltered environment, such as that in a village settlement, is emphasised by Dr. H. O. Blanford, who remarks that "one of the chief obstacles to the employment of ex-patients was the opposition of the healthy employees." Quite so; such opposition does not occur in sheltered and specialised communities. Dr. W. C. Fowler gets very "hot" in the search when he says "the patient should be told the definite time he was likely to be kept in bed"; that is, he should not be left in uncertainty as to his economic future. Add to this the information that his economic salvation is assured, and the object of our search will be found to be in the industrial village settlement for tuberculosis.

I am, Sir, yours faithfully,

P. C. VARRIER-JONES.

Cambridgeshire Tuberculosis Colony, Papworth Hall, Cambridge, Jan. 26th, 1926.

CHARING CROSS HOSPITAL INSTITUTE OF PATHOLOGY.

To the Editor of THE LANCET.

SIR,—I should like to reply to the letter of the Secretary-Superintendent of the Hospital for Epilepsy and Paralysis published in your last issue.

He quite correctly points out that I have changed my mind about the propriety of placing the pathological resources of a large hospital at the disposal of the general practitioner. The Charing Cross Hospital Institute of Pathology—of which I have the honour to be Director—has so frequently been asked to perform tests for persons who have been unable to pay ordinary fees that I believe such an extension is more than justifiable. Furthermore, I am convinced that there is need for direct coöperation between the clinician and the pathologist, and as pointed out in our pamphlet the practitioner is welcomed and encouraged to come to these laboratories with any difficulty that he may experience and for information on any point which he may desire. This, in my opinion, is the soundest basis of clinical laboratory work, and for that class which this institute especially has in mind can best be carried out at one of those great hospitals to which medical men in this country look for guidance in such matters.

I can only regret the letter to which I once appended my name, although I cannot, of course, speak for the other signatories. If my previous letter in any way hampered the scheme of the Hospital for Epilepsy and Paralysis, I apologise most heartily, although at that time convinced that harm might arise.

I am, Sir, yours faithfully,

A. PINEY,
Director of the Charing Cross Hospital Institute of Pathology.

Feb. 1st, 1926.

CHEMOTHERAPY OF SYPHILIS.

To the Editor of THE LANCET.

SIR,—In a recent communication[1] to your columns and an address[2] to the Royal Society of Medicine on Jan. 21st, Dr. C. Levaditi, of the Pasteur Institute, Paris, has given an account of his experiments in the use of stovarsol in syphilis and other spirillary infections. He maintains that the drug is perfectly innocuous. With the greatest deference to his large experience, I feel it may be worth while to relate the following case in which untoward results followed its use. They have led me to think that the treatment is not quite unattended by danger.

A man, aged 46, of strong physique, with a past history of specific infection, consulted me on account of some mucous patches on the dorsum of the tongue. The Wassermann reaction in the blood was positive. He was given several intravenous injections of salvarsan which cleared up the patches. Recently there developed one or two slight ulcers on the tongue and I decided to try the effect of stovarsol, administering it in the usual way per os in tablet form. The dose was 0·25 g. (4 gr.), which is the quantity usually advised. This was taken about one hour after breakfast. Within two hours he was taken violently ill. Severe cramp-like pains developed over the abdomen and lower limbs, and especially in the calf muscles. There was much vomiting for two hours and also diarrhœa. The patient suffered from great prostration and collapse, and the pulse-rate rose to 138 with clammy sweating. At one stage he looked as though he would not recover, but after about three hours he began to pick up, though he remained in a weak state for some days.

Copious draughts of warm water were given to dilute the contents of the stomach, and also a ferric hydrate mixture. The symptoms were ominously suggestive of arsenical poisoning.

It is possible that stovarsol may produce these symptoms after food, as Dr. Levaditi recommends that it be taken before breakfast. It would be interesting to know if others have had a similar experience. It seems clear, however, from this case that stovarsol requires some discretion in its use.

I am, Sir, yours faithfully,

Hull, Feb. 1st, 1926. J. R. O'BRIEN.

MANIPULATIVE TREATMENT.

To the Editor of THE LANCET.

SIR,—The discussion at the Medical Society of London (THE LANCET, Jan. 30th, p. 233) ought to be of immense service to the profession. Reading between the lines there is an admission of something seriously faulty in our system of medical education, and Mr. Elmslie goes further to show that there is also something wrong in our system of specialisation, when he remarks that "A surgeon who practically . . ." &c. (p. 221). Dr. H. A. Des Vœux speaks of the profession being on the "defensive." Though the general public recognises specialists and specialism, its main concern is with the general practitioner. Recognising that the General Medical Council controls medical education, it is naturally disappointed to find one or more of its guaranteed products to be failures, and especially when their mistakes are remedied by unrecognised and unguaranteed specialists. The General Medical Council ought to be on the defensive rather than members of the profession who are not on the Council.

More than half of the persons who are placed on the Register become general practitioners, yet the Council provides no training for them *as such*. As "clearing stations" they are excellent, but as real workers in the profession they are only on the threshold. A full physician or surgeon in a well-appointed hospital never leaves his beds in the sole control of his registered house physician or house surgeon.

The various specialised branches are catered for by diplomas such as those for public health, insanity, &c., but the general practitioner is thrown on the public trained only by men who have never been in general practice. When I say never I mean that few, if any, of the members of teaching hospital staffs have made a living as general practitioners, and such as there are rarely allow it, if ever, to be known. I venture to suggest that general practice is at least as much a specialty as that of a military or naval surgeon, both of whom receive special training before having charge of patients. In these days of specialism the general practitioner must be provided with a special diploma, after which it is less probable the profession will be placed on the defensive.

I am, Sir, yours faithfully,

Buxton, Jan. 31st, 1926. R. CRAWSHAW HOLT.

[1] THE LANCET, 1925, ii., 593.
[2] THE LANCET, Jan. 30th, 1926, p. 215.

PUBLIC MEDICAL SERVICE FOR LONDON.

To the Editor of THE LANCET.

SIR,—In your note on the above Service in your issue of to-day's date you state, "Administration expenses are to be met by an entrance fee of 1*s.* and a quarterly charge of 9*d.* per member. In other words, 3*s.* out of the capitation fee of 13*s.* goes to the administration account." This statement is incorrect. The entrance fee and quarterly levy are paid by the subscriber (the patient), not by the member (the doctor), therefore the payment is in addition to the 13*s.* per annum, not a deduction from it. One of the principles of the scheme is that the capitation fee for the practitioner shall be 13*s.* per annum net.

I am, Sir, yours faithfully,

C. LUTHER BATTESON,
Secretary of the Public Medical Service for London.
Staple House, Chancery-lane, W.C., Jan. 30th, 1926.

Obituary.

PROF. CAMILLO GOLGI.

Camillo Golgi, emeritus professor of general pathology and histology in the University of Pavia, who died on Jan. 21st, had almost reached his eighty-fifth year; yet until a short time ago he preserved to the full the lucidity of his astonishing mind. The honorary fellowship which the Royal Society of Medicine recently conferred on him proved the last of a long series of honours which came deservedly from every part of the world.

Son of a distinguished practitioner, Golgi graduated in medicine at Pavia in 1865. For some time he was a pupil of Mantegazza and Lombroso. It was not long before he became resident physician in the Home for Incurables of Abbiategrasso, which was then only a village in the province of Milan and rather remote from any centre of scientific activity. It was in Abbiategrasso, nevertheless, that Golgi wrote those early papers on the history of pellagra, the ætiology of mental alienations, the structure and development of psammomata, the changes of the lymph vessels of the brain, and the structure of the neuroglia, which made him famous and which even now can be read with great profit. In that home for incurables, where only the most primitive means of investigation were available, he discovered his chromate of silver method, the *reazione nera*, by which nerve-cells with all their processes, and the finest ramifications of those processes, are seen stained intensely black against a transparent yellow background. At a time when histological technique was in its infancy and the structure and functions of the central nervous system appeared as impenetrable mysteries, Golgi's discovery illuminated a world steeped in darkness. A first hint of the new method (the slow process) was to be found in his paper on the grey substance of the brain in 1873; the details were given more fully in a memoir in 1875, when he became extraordinary professor of histology in the University of Pavia. His rapid process was first described in a paper on the structure of medullated nerve-fibres in 1880; the bichromate and sublimate method had been published two years previously. All of them were dealt with again minutely in the last chapter of his monumental work "Sulla fina anatomia degli organi centrali del sistema nervoso," published between 1882 and 1885, and illustrated by 24 magnificent plates which were, unfortunately, much too detailed for reproduction in ordinary text-books.

By Golgi's methods the histology and physiology of the central nervous system were placed on the sound foundation on which they rest at present. Since 1873 he had observed the two types of nerve-cells with which we are now familiar and the collaterals arising from the axon of the cells of the I. type. Already, in 1874, he had described the large nerve-cells of the granule layer of the cortex cerebellæ which bear his name, and had pointed out that the so-called granules were, in fact, minute nerve-cells. In 1875 he had been able to give a first description of the structure of the olfactory bulb and to show that both the olfactory fibres and the protoplasmic processes of the mitral cells arborise within the olfactory glomeruli. In his main work he set forth definitely his fundamenta observations on the morphology and relations of nerve-cells, the central origin of nerves, the architecture of some of the cerebral convolutions, and the structure of the cortex cerebelli and hippocampal region, adding the results of fresh investigations on the morphology, vascular connexions, and histogenesis of neuroglia cells. These studies, and those on the spinal cord (1880 and 1890), led him on to describe his diffuse nervous network and to refute persistently the neurone theory which others had built on the results of his methods.

His other discoveries form a long list. Mention should at least be made of his work on sensory end-organs in tendons (1880), the course of uriniferous tubules (1889), the secretory canaliculi of the oxyntic cells of the stomach (1893), the pericellular investment and internal apparatus of nerve-cells (1898), and the neurofibrils of the superficial portions of nerve-cells (1900). Of his investigations in the field of pathology it will suffice, perhaps, to recall his epoch-making observations on malaria, and his masterly description of the morphological and biological characteristics of the parasites of tertian and quartan fever. Golgi it was who discovered their monogonic cycle of development and first showed that the beginning of the fever coincides with the sporulation phase. No wonder that his name has already become legendary among medical and science students.

CHARLES PLUMLEY CHILDE, F.R.C.S. ENG., M.R.C.P. EDIN.,

CONSULTING SURGEON, ROYAL PORTSMOUTH HOSPITAL.

WE regret to record the death of Mr. Charles Plumley Childe, the well-known Portsmouth surgeon, which occurred on Jan. 29th at Monte Carlo of heart failure following pneumonia.

Childe was the elder son of the late Rev. G. F. Childe, sometime professor of mathematics in the South African College and assistant astronomer of the Royal Observatory, Cape Town. He received his earlier education in South Africa and graduated in arts at the Cape of Good Hope in 1877 with honours, being Maynard Scholar and University Exhibitioner. He then entered King's College, London, where he was Warneford Scholar, and later obtained a scholarship at Magdalene College, Cambridge. He did not proceed to the medical degree but qualified in 1883 as M.R.C.S. Eng., taking the L.R.C.P. Lond. two years later. In 1892 he obtained the F.R.C.S.Eng., and a little later the M.R.C.P. Edin. His life-work was associated with Portsmouth and the district, for it is over 30 years since he began to practise there, first as a general practitioner and later as an operating surgeon. The appointment with which his work was prominently associated was that of surgeon to the Royal Portsmouth Hospital, at which institution he was for some time the chairman of the committee of management, while he was senior consulting surgeon at his death. He was also surgeon to the Hants and Isle of Wight School for the Blind, and surgeon to the Southsea Home for Children, while outside his strictly medical activities he did splendid public service for Portsmouth as a sanitarian. In particular he took a prominent share, as chairman of the health committee of the corporation, in the improvement of housing conditions and the evacuation and clearing up of slum tenements.

During the last 20 years of his life Childe devoted much attention to the incidence and manifestations of cancer, and a small book which appeared in 1907 from his pen put the problems before the public in a really valuable manner. The book was an attempt to substitute sound knowledge and hope for ignorance and despair, and the constructive views with which it closed are to-day far less speculative than they appeared when written. He wrote in the *British Medical Journal* on the operative treatment of intra-oral cancer, in

the *British Journal of Surgery* upon carcinoma of the cervix uteri, and to THE LANCET he made a notable contribution upon "acute abdominal conflux." How good an all-round surgeon he was is well illustrated by the classifications employed in this paper and the indications laid down for operation. In 1923 he was elected President of the British Medical Association, when he chose for his inaugural address the subject of Environment and Health, and dwelt forcibly on the need for concentration on the prevention of disease and on strengthening of resistance by the improvement of general social conditions.

We have lost in C. P. Childe one whose general knowledge and civic qualities made him a fine representative of the profession apart from his fine qualities as a surgeon.

SAMUEL FLEMING, M.B., C.M. EDIN., D.P.H. CAMB.,

LIEUT.-COL., R.A.M.C.; METROPOLITAN POLICE MAGISTRATE.

Samuel Fleming, whose recent death was announced, while only 60 years of age, was better known in his legal than in his medical capacity. The son of Mr. Frederick Fleming, he received his medical education at the University of Edinburgh, and after a successful career as a student graduated in 1890 as M.B., C.M., and after holding certain residential posts started as a general practitioner in Broadway, Worcestershire. From there he shortly after migrated to London and rapidly built up a practice in the Hornsey and Muswell Hill districts, becoming also a member of the district council and taking a prominent part in public affairs. The bent of his activities was further manifested when in 1897 he was called to the Bar and joined the North-Eastern Circuit. His double training he used with considerable advantage in medico-legal cases, and when he accepted the office of a metropolitan police magistrate he was in the enjoyment of considerable practice.

On the outbreak of war he joined the R.A.M.C., but his legal knowledge was promptly utilised by the authorities by his appointment as Legal Adviser and Judge Advocate to the Aldershot Command. From here he was transferred to the War Office as Legal Adviser to the Army Medical Department, being graded as D.A.D.G. in 1917 and receiving a brevet lieut.-colonelcy in 1918. After the war he was appointed Recorder of Doncaster and also became a member of the Bar Council. He resigned the Recordership on being made a police magistrate in 1921, and officiated first at Greenwich and Woolwich, being transferred last year to Lambeth. His death occurred on board ship when on a voyage to South Africa, undertaken partly to visit a married daughter, but partly in response to medical advice enjoining rest from the stress of work owing to his cardiac condition. He had, as a matter of fact, suffered from cardiac disorder for many years, though he had never allowed the disability to interfere with his career.

Dr. Fleming married in 1892 Elizabeth, the daughter of Colonel William Clare Ball, C.B., by whom he had three daughters; these and his widow surviving him.

Dr. F. J. McCann sends us the following personal tribute to his old friend:—

"Sam Fleming, for thus he was known to his many friends, was a popular medical student at Edinburgh University in the 'eighties. Endowed with a baritone voice of good range and quality he was in great demand at 'at homes,' 'kitchen concerts,' and the musical recitals which the late Sir Herbert Oakley gave when professor of music. His geniality and musical tastes formed a bond of union between us which remained unbroken for over 40 years. . . . Colonel Fleming was of medium height with a well-shapen head poised on broad shoulders. He was clean-shaven, with well-cut features. His rounded face was illuminated by greyish-blue eyes surmounted by prominent eyebrows, whilst his luxuriant hair, which in later years had become grey, added further distinction to his appearance. The genial smile and the merry twinkle in his large expressive eyes with which he greeted his friends added still further attraction to his personality. He possessed, probably more than most men, the capacity for making friends and retaining friendships, and was seen to greatest advantage when welcoming his friends at his home. Here he was ably supported by his wife, an exceptionally fine amateur pianist. But behind this geniality, this success, and this *joie de vivre* there lurked the spectre of cardiac disease. For many years he had suffered from a cardiac disorder which for a long time at least had nullified the prognostications concerning it. . . . Latterly, however, certain signs appeared which portended disaster, forcing him to slacken the pace. Attacks of cardiac pain and breathlessness on exertion caused him to realise that all was not well. A rest from work and a voyage to South America had produced a temporary amelioration, and it was thought a further holiday would be beneficial. He accordingly determined to go to South Africa to pay a visit to his daughter, but shortly after embarking on the voyage he had a severe anginal attack from which he recovered, but a few days later he succumbed to a second attack. He was buried at sea."

JOHN CHADWICK, M.R.C.S. ENG.

Dr. J. Chadwick, the senior medical practitioner of the Rochdale district of Lancashire, died on Jan. 25th at his house in Milnrow within six days of his seventy-first birthday. In Milnrow, where his family has lived for over 300 years, he had practised for more than half a century. The son of a medical man, he received his early education at the Rochdale Grammar School; he then entered Owens College, Manchester, and qualified L.S.A. in 1877 and M.R.C.S. in 1883. From 1884 onwards he took an active interest in the public life of Milnrow, and in 1885 was elected first chairman of the local district council. In 1900 he resigned membership of the council to become medical officer of health for the district, a position which he continued to hold up to the time of his death. As medical officer of health he was very zealous in his work, and as his reports showed, there was plenty of scope for his endeavour. He served on the Lancashire County Council from 1898 onwards and was also a county alderman. As a member of the county council he acted on the Child Welfare, Public Health, Tuberculosis, Old Age Pensions, and Midwives Act Committees, and was also representative of the council on the Lancashire Asylums Board. Dr. Chadwick's unfailing kindliness and strong, vigorous character made him much respected as a practitioner. He had a retentive memory and was an excellent story-teller, especially in the Lancashire dialect. He was interested in agriculture and keen on golf and cricket. It had been the intention of a large number of friends to make a presentation of his portrait to Dr. Chadwick on the completion of his seventy-first year, and all arrangements had been made. He is survived by his widow and one sister.

FRANK BOXALL, M.R.C.S. ENG., L.R.C.P. LOND.

THE death on Jan. 14th of Dr. Frank Boxall removes a familiar figure from West Sussex. Born in 1864 near Rudgwick, the village where he spent his life and his energies, son and brother himself of medical men, he was educated at University College Hospital and qualified in 1886, and after spells as obstetric assistant at his hospital and R.M.O. of St. Pancras Dispensary, he settled in Rudgwick and built up there a practice which he conducted single-handed for some 36 years, until his unexpected and rather sudden death. Throughout that period he rarely took a holiday, though he used to make time to attend, often at considerable distances and before the easy days of motors, branch or divisional meetings of the B.M.A. The most modest and unassuming of men, his life was a fine example of unselfish devotion to his patients and in accordance with the best traditions of the profession of medicine. Not only was he the friend of the countryside in sickness, in trouble, or in difficulty, but he was for some years chairman of the parish council and, ever a good churchman, churchwarden. The love and respect in which he was held was evidenced at his funeral by the crowded church, the neighbourhood of all classes mustering to pay their tribute to their trusted friend. He leaves a widow, two sons, and four daughters.

Medical News.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—An ordinary Comitia of the College was held on Jan. 28th, the President, Sir Humphry Rolleston, being in the chair.—The following were admitted to the Membership:—

Drs. Douglas K. Adams, George A. Allan, John F. Anderson, George V. Ashcroft, Hugh Barber, Harry Bedingfield, John A. Birrell, Ernest Bulmer, Ernest W. H. Cruickshank, Manindranath De, Henry B. F. Dixon, Daniel M. B. Evans, William M. Feldman, Gwenvron Mary Griffiths, Arthur H. Hall, John T. Ingram, Leslie M. Jennings, Frank A. Knott, Robert Knox, David Krestin, Alexander Lyall, Thottakat Bhaskara Menon, Trevor Owen, Albert E. H. Pinch, George H. Rossdale, Percy S. Selwyn-Clarke, George Simpson, Byron L. Stanton, Alexander J. H. Stobo, Selwyn E. Tanner, John T. P. Tansey, Norman B. Williamson, and Claude Wilson.

On the nomination of Council, Dr. James Collier, Dr. S. W. Wheaton, Dr. J. S. Fairbairn, and Dr. C. J. Martin were elected Councillors to take the place of Dr. W. S. Lazarus-Barlow, Sir John Broadbent, Dr. T. W. Eden, and Sir George Newman.—The President consulted the College as to the desirability of appointing an Assistant Registrar, and Dr. R. O. Moon was nominated for appointment at the next meeting.—Licences to practise were conferred upon 184 candidates (including 37 women) who have passed the Final Examination in Medicine, Surgery, and Midwifery of the Conjoint Board, and have complied with the necessary by-laws. The following are the names and medical schools of the successful candidates:—

P. W. A. Agnew, St. George's; S. A. Antoun, Birmingham; N. A. Arnold, Guy's; A. Ashworth, Liverpool; A. L. Banks, Middlesex; C. M. Barker, Univ. Coll.; L. H. Belcher, Guy's; R. J. I. Bell and S. B. Benton, St. Bart.'s; S. Bernstein and M. Bomze, Univ. Coll.; Elsie Boyton, King's Coll.; R. Broomhead, Leeds; A. Byrne-Quinn, St. Thomas's; Irene F. Callender, St. Mary's; A. L. Canby, St. Thomas's; De Lisle Carey, St. Mary's; S. Chazen, Guy's; R. Childs, St. Thomas's; J. H. Chitty, Guy's; J. H. Clapp, London; A. Clark, St. Bart.'s; G. C. W. Clarke, Sheffield; H. N. Collier, Guy's; Violet H. Comber, Univ. Coll.; R. V. Cooke, Bristol; W. F. Cooper, St. Bart.'s; A. R. Cox, Guy's; S. T. Davies, Univ. Coll.; T. W. Davies, Cardiff; T. E. Davies, St. Thomas's; Hilda C. Dean, Charing Cross; A. E. de Fonseka, Ceylon and King's Coll.; May W. de Livera, Ceylon and Royal Free; G. C. Dewes, St. George's; H. V. Dicks, St. Bart.'s; Mary G. H. Dickson, King's Coll.; Margaret H. Duncan, London; G. H. Dymond, St. Bart.'s; Elaine O. H. Earengey, Univ. Coll.; R. W. B. Ellis, St. Thomas's; D. C. M. Ettles and J. Evans, Guy's; B. Fink, Manchester; C. W. Flemming, Univ. Coll.; T. D. W. Fryer, St. Thomas's; S. W. Gabbe, Cape and St. Thomas's; S. C. Gawne, Liverpool; P. Gibbin, Cardiff; Dorothy Godden, St. Mary's; P. J. Gonsalves, Guy's; A. P. Gorham, Bristol; Agnes H. Gray, Royal Free; D. P. Gray, Middlesex; Margaret K. Green, St. Mary's; W. H. Green, Middlesex; C. R. M. Greenfield, St. Bart.'s; L. A. N. Greenway, Calcutta and King's Coll.; B. J. Griffiths, Cardiff; A. A. M. Groot, Leyden and Westminster; A. Gross and F. P. Guilfoyle, St. Bart.'s; K. H. Hadley, Melbourne and Middlesex; R. N. Hall, St. George's; C. W. Harrison, St. Bart.'s; L. Hartston, London; H. G. Harvey, St. Thomas's; J. P. Helliwell, St. Mary's; T. R. Hill, Guy's; R. L. Holt, Manchester; B. B. Hosford, St. Bart.'s; Mary H. M. Huggett, King's Coll.; N. C. Hypher, London; D. E. Iago-Jones, Cardiff and Middlesex; R. J. Isaac, St. Mary's; G. L. C. Jones, Cardiff and St. Bart.'s; T. Jones, Cardiff; J. Kahanas, Berne and London; J. A. Kerr, Birmingham; Hilda M. King, St. Mary's; R. H. Knight, St. Bart.'s; P. H. Knowles, Bristol and St. Mary's; T. P. Lalonde, Bristol; F. J. L. Lang, St. Mary's; F. W. Law, Cambridge and Middlesex; D. F. Lawson and R. L. J. Le Clezio, St. Thomas's; Margaret E. Ledger, Royal Free; Anne Theresa Leigh, Manchester; E. A. Lewis, St. George's; R. A. V. Lewys-Lloyd, St. Bart.'s; Leonora M. K. Lines, Charing Cross; T. M. Ling, St. Thomas's; Edith M. Little, Royal Free; G. F. H. McCormick, Middlesex and Univ. Coll.; G. L. M. McElligott and L. J. McGregor, St. Thomas's; Evelyn T. D. Maclagan, St. Mary's; A. J. McMillan, Middlesex; P. Malpas, Liverpool; Ruth E. Mansfield, Westminster; Mary A. Marshall, St. Mary's; I. O. Martin, Cardiff; S. R. Matthews, Middlesex; H. R. R. Mavor, St. Thomas's; W. Mayne, Guy's; S. Mellins, Middlesex; R. H. Metcalfe, St. Thomas's; G. C. Milner, London; J. Mintzman, Middlesex; F. E. Montague, St. Thomas's; P. Morton, London; M. Mundy, St. Bart.'s; D. H. P. M. Q. Mylechreest, St. Thomas's; C. B. Nicholson, Middlesex; J. R. P. Norman, Birmingham; G. F. Oakden, Cambridge and St. Thomas's; E. J. O'Keeffe, N.U.I. and London; J. E. J. Palser and C. H. Parker, London; G. E. G. Peirce, St. Mary's; H. A. Picton, Birmingham; H. P. Pieris, Middlesex; N. R. Pooler, St. Mary's; W. G. Porter, Guy's; D. C. Price, St. Bart.'s; Winifred E. Probert, Cardiff and Westminster; D. M. Pryce, St. Mary's; Muriel A. Pugh, Charing Cross; F. W. F. Purcell, Cape and St. Thomas's; Nellie L. Pyman, Charing Cross; J. H. Randall, Univ. Coll.; Marjorie D. Reddan, Royal Free; Margaret G. P. Reed, King's Coll.; H. G. St. M. Rees, Cardiff; J. L. Reeve, St. Bart.'s; A. M. Rhydderch, London; O. Richardson, St. Bart.'s; L. Roberts, Middlesex; Victoria A. Roberts, Royal Free; D. J. L. Routh and Audrey E. Russell, Univ. Coll.; J. W. Schabort, Guy's; Gitta Schewel, Westminster; F. L. G. Selby, St. Mary's; T. H. Sellors, Middlesex; D. W. Seth-Smith, St. George's; A. de M. Severne, St. Thomas's; W. D. Sheldrake, Guy's; M. Sidky and H. J. A. Simmons, Middlesex; W. S. Slater, Manchester; E. V. Slaughter, Middlesex; Beatrice G. Smith, Univ. Coll.; L. G. Smith, St. Bart.'s; A. Sourasky, Leeds; H. B. Stallard, St. Bart.'s; C. A. Stanley, St. Thomas's; B. L. Steele, Univ. Coll.; A. F. H. Stewart, Guy's; R. K. Stockbridge, Adelaide and London; Dorothy S. Tait, St. Mary's; G. M. Tanner, St. Bart.'s; Constance P. Thomas, Cardiff; D. W. R. Thomas, Cardiff and Middlesex; R. Thorpe, St. George's; G. O. Tippett, St. Thomas's; R. S. Tooth, St. Bart.'s; Rose A. H. Trnill, Charing Cross; R. M. Walker, Univ. Coll.; L. H. F. Walton and H. D. Weatherhead, St. Thomas's; Janet Welch and Violet M. Weston, Royal Free; E. A. White, St. Bart.'s; J. E. B. Williams, Univ. Coll.; J. H. Williams, Cardiff; H. Williamson, King's Coll.; D. B. Wilson, Cambridge and Birmingham; Jessie Wiltshire and Ada R. Winter, Univ. Coll.; J. Wiseman, Guy's; Joan Worsfold, Royal Free; and Dorothy E. Wright, Univ. Coll.

The special diplomas mentioned in the report of the Council of the Royal College of Surgeons of England were also conferred (jointly with that College) upon the candidates whose names were specified in THE LANCET of Jan. 23rd. In addition the Diploma in Ophthalmic Medicine and Surgery was conferred upon the following candidates:—

Esme V. Anderson, J. B. Baird, A. Bajaj, D. P. Bilimoria, C. H. G. Blakemore, Victoria E. Brander, J. A. Browne, A. Caddy, H. R. Dive, R. R. Garden, P. N. Gokhale, G. McN. Hargreaves, K. R. Hill, A. MacRae, J. Marshall, J. N. Piplani, Portia K. Taylor, Doris Todd, and S. T. Wong.

Dr. Major Greenwood moved the following resolution:—"The College, taking note of the fact that members of the medical profession have stated in the public press that the practice of certain methods of diagnosis and treatment generally known as 'Psycho-analysis' is open to grave objections, requests the President to appoint a committee to inquire into the truth of such allegations, so far as they relate to the practice of members of the medical profession, and to report what restrictions, if any, it may be in the public interest to impose upon the use of these methods by Fellows, Members, and Licentiates of the College." This was not carried.—Sir Francis Champneys was appointed, on the nomination of the Council, as a representative of the College on the Central Midwives Board.—Dr. Drewitt was reappointed representative of the College on the Committee of Management of the Chelsea Physic Garden for four years.—Sir Thomas Barlow was reappointed a representative of the College on the Executive Committee of the Imperial Cancer Research Fund.—Dr. Arthur Shadwell was appointed a representative of the College on the Queen Victoria Jubilee Institute for Nurses.—The President announced that he had appointed Dr. F. G. Crookshank to deliver the Bradshaw Lecture for 1926, and that the Council have appointed Mr. W. F. Dearden to be Milroy Lecturer for 1927.—The resignation of Mr. Bryan Farrer as junior standing counsel to the College was received. The President nominated Mr. Dighton Pollock for election. It was directed that a letter should be sent to Mr. Bryan Farrer thanking him for services of quarter of a century.—The resignation of Sir Dyce Duckworth as Representative Governor of the University of Liverpool was received. The Council expressed their high sense of the services he has rendered. Dr. Abram was appointed in his place.—The Registrar moved for the first time that By-law 160 be amended to read as follows:—

"A list of all Fellows and Members of the College, and a list of the new licentiates and diplomates in the special branches of medicine admitted during the preceding 12 months, with their places of residence, shall be printed annually under the direction of the Censors' Board, and a copy of such lists certified under the College seal shall be sent to the registrar of the branch medical councils for England, Scotland, and Ireland."

The report of the representative of the College on the General Medical Council on the proceedings of the Council at its session held in November last was received.—Books and other donations to the Library presented during the last quarter were received and thanks returned to the donors.

The following reports from the Committee of Management, dated Dec. 23rd, 1925, were received and adopted:—

1. The Committee of Management recommend that certain universities which were removed in the year 1918 from the list of recognised places of study, and graduates of which are admissible to the Final Examination of the Board, be now reinstated in the list, as follows:—*Austria:* Graz, Innsbruck, Vienna. *Czecho-Slovakia:* Prague. *Germany:* Berlin, Bonn, Breslau, Erlangen, Freiburg, Giessen, Gottingen, Greifswald, Halle, Heidelberg, Jena, Kiel, Königsberg, Leipzig, Marburg, Munich, Tübingen, Würzburg. *Hungary:* Budapest. The Committee also recommend that the University of Hamburg be added to the list of recognised German universities.

2. The Committee of Management recommend that the following additional clauses be added in Chapter I. of the Regulations of the Examining Board in England: X. Any representation which a candidate may desire to make with regard to the conduct of his examination must be addressed to the secretary

and not, under any circumstances, to any of the examiners.
XI. The Committee of Management may refuse to admit to examination or to proceed with the examination of any candidate who infringes a regulation of the Examining Board in England, or is considered by the Committee to be guilty of behaviour prejudicial to the proper management and conduct of the Examination.

3. In accordance with the conditions relating to special diplomas laid down by the Royal Colleges in April, 1920, the Committee of Management now report that they have recognised courses of instruction at the following institutions:—D.P.H.: Newport Borough Isolation Hospital (fever hospital practice). D.T.M. & H.: Royal Army Medical College (laboratory course). D.O.M.S.: Cork Eye, Ear and Throat Hospital (complete courses). D.P.M.: Bethlem Royal Hospital (neurology, pathology, and bacteriology). D.L.O.: Royal Naval Hospitals at Chatham, Haslar, and Plymouth (hospital practice only under special conditions). Norfolk and Norwich Hospital (hospital practice only).

The Comitia was constituted into an extraordinary Comitia and, on a report from the Censors' Board, it was resolved: "That Charles Bertrand Wagstaff be declared to be no longer a Licentiate of the College; that he forfeit all the rights and privileges of a Licentiate; and that his name be expunged from the List of Licentiates—during the pleasure of the College."

After some formal College business the President dissolved the Comitia.

SOCIETY OF APOTHECARIES OF LONDON.—At recent examinations the following candidates were successful in the undermentioned subjects:—

Surgery.—E. W. D. Long, London Hosp.; P. B. B. Mellows, St. Bart.'s Hosp.; D. P. Mitra, Charing Cross Hosp.; M. N. Nicolson, Sheffield; and G. H. Pereira, St. George's Hosp.

Medicine.—C. H. S. Johnston, Birmingham; P. H. L. Moore and G. H. Pereira, St. George's Hosp.; and B. A. Perott, Petrograd.

Forensic Medicine.—W. Hinds, Durham; and M. Pettigrew, Sheffield.

Midwifery.—M. Bannounah, Guy's Hosp.; W. H. D. Priest, King's Coll. Hosp.; L. A. Rostant, St. Thomas's Hosp.; and J. W. Whitney, London Hosp.

The Diploma of the Society was granted to the following candidates entitling them to practise medicine, surgery, and midwifery: M. Bannounah, E. W. D. Long, P. B. B. Mellows, and B. A. Perott.

UNIVERSITY OF LONDON.—A meeting of the Senate was held on Jan. 27th, Prof. E. A. Gardner, the Vice-Chancellor, being in the chair. The Doctorates conferred include the following:—D.Sc. in Psychology: Mr. E. H. Magson, of University College, for a thesis entitled How We Judge Intelligence. D.Sc. in Cytology: Mr. R. J. Ludford, for a thesis entitled Studies in Normal and Pathological Cytology, and other papers. Dr. Andrew Balfour and Dr. M. E. Delafield were appointed to represent respectively the University and University College at the Imperial Congress of the Royal Sanitary Institute to be held in London in July to celebrate the jubilee of the Institute.

Applications are invited for the Graham scholarship, value £300, founded by the late Dr. Charles Graham to enable a young man to continue his pathological researches, his services remaining under the direction of the Professor of Pathology at University College. Applicants, who need not be students of the University medical schools, should send in their names before March 1st. Further particulars may be obtained from the Academic Registrar of the University.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—On Feb. 11th Dr. S. A. Kinnier Wilson will lecture for the Fellowship on Sudden Cerebral Lesions, at 5 P.M., in the lecture hall of the Medical Society of London, 11, Chandos-street, W. This lecture is free to members of the medical profession. The Queen Mary's Hospital, Stratford, will give a general intensive course in medicine, surgery, and the special departments from Feb. 15th to 27th. Daily sessions will be held from 10 A.M. to 5 P.M. (excepting Mondays, when they begin at noon), including demonstrations of clinical methods and groups of illustrative cases. There will be opportunities for those attending the course to visit the new gynæcological and obstetrical department at this hospital. Courses in progress are a combined course in Diseases of Children at Paddington Green Hospital, Victoria Hospital, and the Children's Clinic, and a comprehensive course in Venereal Diseases at the London Lock Hospital. For the convenience of general practitioners the London Temperance Hospital will hold a general course from 4.30 to 6 P.M. in the various departments of the hospital from Feb. 8th to 19th. The March courses are as follows: Bacteriology, diseases of the chest, gynæcology, ophthalmology, tropical medicine, and a course for general practitioners. Copies of all syllabuses, of the General Course programme, and of the *Post-Graduate Medical Journal* may be had on application to the Secretary of the Fellowship, at 1, Wimpole-street, London, W. 1.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society will be held at the Miller General Hospital, Greenwich, S.E., on Friday, Feb. 12th, at 8.45 P.M., when Dr. Millais Culpin will give an address entitled the Scope of Psychotherapy.

HUNTERIAN SOCIETY.—The annual dinner of the society will be held at the Hotel Victoria, Northumberland-avenue, on Thursday, Feb. 11th, at 7.30 P.M. The Lord Mayor and Lady Mayoress of London and the Bishop of Kensington will be amongst the guests. Fellows wishing to be present are asked to write to Mr. Mortimer Woolf, 94, Harley-street, London W. 1.

THE ROGERS MEDICAL PRIZE ESSAY.—Nearly 40 years ago Dr. Joseph Rogers, Chairman of Council and Vice-President of the Poor-law Medical Officers' Association, left £500 in trust for the establishment of an essay competition, the money to accumulate until the sum in hand sufficed to provide a prize of £150, for the best essay on the Treatment of the Sick Poor of the Country and the Preservation of the Health of the Poor. The first award will be made on June 21st, the anniversary of the death of Dr. Rogers's widow. The trustees are the President of the Royal College of Physicians of London and the Master of the Society of Apothecaries, and the prize will be competed for every ten years.

PARIS FACULTY OF MEDICINE.—A revision and post-graduate course on Recent Views of Clinical Practice and the Use of Current Laboratory Methods in Diagnosis is to be given at the Medical Clinic of the Hôtel-Dieu from March 22nd to April 2nd, under the direction of Prof. Maurice Villaret. There will be 36 lessons, and they will be so arranged as to give students a chance of seeing something of the hospital work of Paris in the intervals. Further information may be obtained from the Secretary of the Faculty of Medicine of the University of Paris. Afternoon courses in Dermatology and Syphilology are held at the Hôpital St. Louis under the direction of Prof. M. Jeanselme. The next course in dermatology will begin on April 12th and in Venereal Diseases on April 17th. Details of these can be obtained from Dr. Burnier, Hôpital St. Louis, Paris.

LANCASHIRE HOSPITALS FOR CRIPPLED CHILDREN.—The Lancashire County Council is asked to approve a proposal to establish a new tuberculosis hospital at Wrightington Hall, near Parbold, where it is proposed to provide 80 beds for adults and 146 for children in five new pavilions, leaving the hall, after suitable changes, as the administrative block. The Ministry of Health has agreed, subject to the approval of the Treasury, to make a grant of £180 per bed towards the capital cost. The Council has also been recommended by its finance committee to apply for sanction to a loan of £25,000 to meet the cost of buying the Biddulph Orthopædic Hospital, North Staffordshire, for the treatment of crippled school-children.

BIRTH CONTROL CLINIC FOR MANCHESTER AND SALFORD.—It is announced that a Manchester and Salford mothers' clinic is shortly to be established, probably with its headquarters in Salford. A woman doctor has been appointed to conduct the work and the necessary funds have so far been obtained by private subscription. The services of the clinic will be available only for women who are already mothers. The promoters aim at providing a channel through which married women, whose means are insufficient to enable them to command the services of a private practitioner, may obtain, under expert medical direction, knowledge of the best known methods of contraceptive birth control. The Ministry of Health does not at present allow this instruction to be given at the existing maternity and infant welfare centres.

THE LATE DR. W. C. COOKE.—After a long illness Dr. William Conway Cooke died on Jan. 26th at the age of 76. A son of the late Rev. Canon Daniel Cooke, of Rochester, Kent, Dr. Cooke studied medicine at King's College Hospital, London, and qualified as M.R.C.S. Eng. in 1875 and L.R.C.P. Edin. two years later. In 1878 he settled at Bognor, where he joined the late Dr. Whitman Thompson in partnership. Later he entered practice on his own and became medical officer of health, holding the office for the long period of 32 years. Some five years ago he resigned owing to ill-health. Dr. Cooke was appointed to this important post when Bognor was a small fishing village, and that the town has now developed into a flourishing seaside resort is no doubt in a great measure due to the care he exercised. In 1895 Dr. Cooke entered into partnership with Dr. F. S. Tidcombe, and they built up a very large practice, not only in Bognor itself but in the district round. During the war Dr. Cooke was a major in the R.A.M.C. (T.). He leaves a widow and a daughter.

LEICESTER ROYAL INFIRMARY.—It is hoped to rebuild the central wing of this institution at a cost of £46,000, of which only £12,000 has yet been obtained. An anonymous offer of £16,000 has now been made on condition that the balance of £18,000 is raised without recourse to invested funds.

AN international post-graduate medical course will be held, with special reference to balneology and balneotherapy at Karlsbad on Sept. 12th–18th. Special railway concessions are being offered to foreign doctors. Further information can be obtained from Dr. Edgar Ganz, Karlsbad.

LONDON TEMPERANCE HOSPITAL.—This hospital is in such serious difficulties that the board of management state that unless generous support is forthcoming they will have to consider seriously whether it shall be closed. Last year ended with a deficit of £26,000, caused to a great extent by compulsory extraordinary expenditure.

ROYAL MEDICO-PSYCHOLOGICAL ASSOCIATION.—The next quarterly meeting of this association will take place on Feb. 16th at 19B, Tavistock-square, London, W.C. (British Medical Association House), under the presidency of Sir Frederick Mott, F.R.S., at 2.30 P.M. Dr. Isabel Robertson will read a paper entitled "Blood and Vascular Conditions in Psychoses."

THE LATE DR. VERNON HOWARD.—Dr. E. V. Howard, who died in London on Jan. 18th, was a graduate in arts, letters, and medicine of the University of Durham, where he qualified M.B., B.S. in 1921. For a time he acted as house surgeon at the Eye Infirmary, Newcastle, and in April last was appointed medical officer and public vaccinator for the Benington district under the Boston Board of Guardians. Besides holding the appointment he was engaged in private practice in this district of Lincolnshire.

LONDON (R.F.H.) SCHOOL OF MEDICINE FOR WOMEN.—Nearly 200 past and present students assembled on Jan. 28th at the School to meet Dr. F. Wood Jones, F.R.S., now professor of anatomy in the University of Adelaide, who was on a brief visit to this country. Prof. Mary Lucas Keene, on behalf of the staff and past students, expressed the pleasure felt at seeing him again at the School, and recalled the seven happy years during which he had worked among them as colleague and teacher. Prof. Jones then gave a lecture on the Theories of Evolution.

ROYAL SANITARY INSTITUTE.—A sessional meeting will be held on Friday, Feb. 26th, in the Municipal Buildings, Middlesbrough, from 4 P.M. onwards. There will be discussions on the Malthriving Infant, the Present Type of Small-pox, Organic Salvage, and Housing and Main Drainage, and on the following day there will be an opportunity to visit works of sanitary interest in the neighbourhood. The first two discussions will be opened by Dr. Grace Dundas and Dr. C. V. Dingle respectively. Those intending to be present should notify the hon. local secretary, Mr. S E. Burgess, city engineer and surveyor, not later than Feb. 20th.

MIDDLESEX HOSPITAL ANNEXE.—From Feb. 12th to the 14th the temporary premises of the Middlesex Hospital, which have been formed out of an old M.A.B. infirmary in Cleveland-street (near the hospital) will be on view prior to their opening by the Minister of Health on Feb. 23rd. The opening of the annexe is described as the first step towards the reconstruction of the Middlesex, and as the processes of pulling down and rebuilding are likely to last for several years the temporary home has been made complete in itself. From top to bottom the building has been re-floored, drained, heated, and lighted according to modern standards of hospital design. There are six wards, two operating theatres, and an X ray department, and about 180 patients will be moved into the building before the opening.

ST. THOMAS'S HOSPITAL.—The ballot designed to help the funds has actually resulted in a loss to the hospital of more than £1000. Holders of half-crown tickets were asked to place in order of popularity 12 out of a list of 24 sportsmen, and it was hoped that half a million tickets would be sold. Actually only about 250,000 were disposed of, and Mr. G. Q. Roberts, the secretary, believes that the competition was too difficult. Large sums were spent upon advertising, and during the competition two other ballots, with even larger prizes, were announced. The winner of the first prize of £5000, a lady employed in the Post Office Savings Bank Department, has given a donation of £500 and has been elected a governor, and the winner of the touring car, which formed the second prize, a woman shop assistant, has promised to return 10 per cent. of the amount for which she sells it.

NORTHAMPTONSHIRE men and women in London are requested to get into touch with an organisation which arranges social gatherings for them. The secretary is Mr. J. H. Woolgar, 1, Dorset-buildings, E.C. 4.

PRESENTATION TO DR. ESSEX WYNTER.—Sir John Bland-Sutton presided over a gathering of old Middlesex Hospital men at Prince's Restaurant on Jan. 28th, when Dr. Essex Wynter's friends entertained him to dinner on his retirement from the active staff of the Middlesex Hospital. Dr. Wynter was presented with a portrait of himself, painted in oils by Miss Beatrice Bright, which was the gift of over 140 subscribers.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Opening of the Session.—The King's Speech.

THE new session of Parliament was opened by the King in State in the House of Lords on Feb. 2nd. In the course of His Majesty's gracious speech from the Throne it was stated that invitations were being issued to the Governments of Belgium, France, Germany, and Italy to attend a conference in London to consider the possibility of securing an effective international agreement for regulating hours of labour. The Government had given earnest consideration to the increasing need for national economy. Proposals for effecting reductions of public expenditure were now being formulated and the House of Commons would be asked to pass measures required to give effect to them without delay.

While His Majesty had learned with satisfaction of the progress made in the building of new houses in the urban areas of England and Wales, the conditions under which many of the people were compelled to live, both in country districts and in the congested areas of numerous towns, still occasioned him deep concern. His Ministers were now examining certain proposals for the improvement of these conditions, and if time permitted they would submit to Parliament measures designed to hasten the removal of the worst defects, both in town and country. Among the Bills which would, if time and opportunity permitted, be laid before Parliament in the coming session were measures dealing with National Health Insurance, the control of road vehicles, the finance of Poor-law in London, and the position and powers of boards of guardians, and the rating and valuation machinery in Scotland.

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

ROYAL SOCIETY, Burlington House Piccadilly, W.

THURSDAY, Feb. 11th.—4.30 P.M. *The following papers will be read:* H. G. Thornton and N. Gangulee: The Life Cycle of the Nodule Organism *Bacillus Radicicola* (Beij) in Soil and its Relation to the Infection of the Host Plant. (Communicated by Sir John Russell, F.R.S.) C. E. Walker: The Meiotic Phase in Certain Mammals. (Communicated by Sir John Farmer, F.R.S.) J. Needham and Dorothy Needham: Further Micro-Injection Studies on the Oxidation-Reduction Potential of the Cell Interior. (Communicated by Sir Frederick Hopkins, F.R.S.) J. W. H. Harrison and F. C. Garrett: The Induction of Melanism in the Lepidoptera and its Subsequent Inheritance. (Communicated by Prof. E. W. MacBride, F.R.S.) J. Gray: The Mechanism of Ciliary Movement. V. The Effect of Ions on the Duration of Heat. (Communicated by Prof. J. Stanley Gardiner, F.R.S.) N. H. W. Maclaren: The Early Development of Cavia: Note on Associated Remains of Previous Placentation. (Communicated by Prof. T. H. Bryce, F.R.S.)

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MONDAY, Feb. 8th.—5 P.M., WAR. At the Central Medical Board, Royal Air Force, 3 and 4, Clement's Inn, W.C. (entrance off the Strand, near St. Clement Danes Church). Demonstration: The Medical Examination of Candidates for Aviation, with Particular Reference to the Physiological and Ophthalmological Tests Employed.

WEDNESDAY, Feb. 10th.—4.30 P.M., PSYCHIATRY. Pathological Meeting in the Laboratory of the Maudsley Hospital, Denmark Hill, S.E. Dr. Golla: Various Recent Methods of Investigation. Dr. Lovell: Macroscopic and Microscopical Specimens. 5.30 P.M. SURGERY: SUB-SECTION OF PROCTOLOGY. Discussion: The Complications of Excision of the Rectum.

THURSDAY, Feb. 11th.—8.15 P.M., TROPICAL DISEASES AND PARASITOLOGY. Laboratory Meeting at the Royal Army Medical College, Grosvenor-road, S.W. 8.30 P.M., NEUROLOGY. Discussion: The Sympathetic Innervation of Striated Muscle and its Bearing on the Treatment of Spastic Paralysis.

FRIDAY, Feb. 12th.—5 P.M., CLINICAL. At the Brompton Chest Hospital. Dr. Batty Shaw: A Series of Cases illustrating Pure Pulmonary Tuberculosis, Simple Consumption, and Tuberculo-Consumption. Mr. Roberts: Two Cases of Diaphragmatic Hernia. Dr. Burrell: Case of Bronchiectasis. Mr. Tudor Edwards: Two Cases of Dermoid Cyst. 8.30 P.M., OPHTHALMOLOGY (Cases at 8 P.M.) Mr. Lindsay Rea: Two Cases of Plastic Repair of Perforated Corneæ. Mr. P. G. Doyne: Ocular Torticollis. Mr. Lindsay Rea: Plastic Repair of Perforations of the Cornea.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, W.
MONDAY, Feb. 8th.—8.30 P.M., Discussion on Right Iliac Fossa Pain, introduced by Dr. H. W. Carson, Dr. A. F. Hurst, and Dr. T. W. Eden.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.
FRIDAY, Feb. 12th.—8.45 P.M. (at the Miller General Hospital, Greenwich, S.E.), Dr. Millais Culpin: The Scope of Psychotherapy.

BIOCHEMICAL SOCIETY.
MONDAY, Feb. 8th.—4.30 P.M. (at the Lister Institute of Preventive Medicine, S.W.). *Communications:* H. Chick: Sources of Error in the Biological Method of Investigating Fat-Soluble Vitamins. P. Hirsch: The Serum Diagnosis of Malignant Growths with the Interferometer. P. C. Raiment: The Oxidation of Uric Acid with Hydrogen Peroxide. I. S. Machsan and D. Hoffert: The Synthesis of Fat by the Living Organism. N. Wright: The Action of Hypochlorites on Amino-acids and Proteins. R. H. Marriott: The Action of Sodium Sulphide on Hair.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn-fields, W.C.
MONDAY, Feb. 8th.—5 P.M., Prof. A. Tudor Edwards: The Surgical Treatment of Phthisis and Bronchiectasis.
WEDNESDAY.—5 P.M., Prof. A. Lawrence Abel: The Treatment of Cancer of the Œsophagus.
FRIDAY.—5 P.M., Prof. H. W. B. Cairns: Neoplasms of the Testicle.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, London, W.
MONDAY, Feb. 8th, to SATURDAY, Feb. 13th.—Fellowship of Medicine lecture, Medical Society, 11, Chandos-street, W. Thursday, 5 P.M., Dr. Kinnier Wilson: Sudden Cerebral Lesions.—HOSPITAL FOR DISEASES OF THE SKIN, Blackfriars-road, S.E. Instruction in the O.P. Department from 2.30 P.M. Tues. and Frid., 5.30 P.M., Venereal Clinic.—LONDON LOCK HOSPITAL, Dean-street. Comprehensive Course, Instruction in the O.P. Department daily and lectures dealing with the various aspects of the disease.—LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W. 4.30 to 6 P.M., Special Course for General Practitioners.—COMBINED CHILDREN'S COURSE, Paddington Green Hospital, Victoria Hospital (Tite-street, Chelsea), and the Children's Clinic, Cosway-street, N.W. Morning and afternoon sessions daily.—PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham. Tues., 2 P.M., Mr. H. W. Carson: Special Clinical Demonstration. Further information from the Secretary of the Fellowship of Medicine.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham N.
MONDAY, Feb. 8th.—10 A.M., Surgical Out-patients: Mr. W. E. Tanner. 10.30 A.M., Gynæcological Operations: Mr. A. E. Giles: Throat, Nose and Ear Operations: Mr. W. Ibbotson. 2 P.M., Medical, Surgical, and Gynæcological Clinics, Operations. 6.30 P.M., Venereal Department.
TUESDAY.—2 P.M., Medical, Surgical, Throat, Nose and Ear Clinics, Operations. 4.30 P.M., Mr. E. Gillespie: The Diagnosis and Treatment of Cancer of the Breast.
WEDNESDAY.—10.30 A.M., Surgical Operations: Mr. E. Gillespie. 2 P.M., Medical, Eye, and Skin Clinics, Operations. 5.30 P.M., Venereal Department.
THURSDAY.—10.30 A.M., Dental Out-patients: Mr. E. S. Pierrepont. 2 P.M., Medical, Surgical, and Throat, Nose and Ear Clinics, Operations. 5 P.M., Operations.
FRIDAY.—10.30 A.M., Eye Operations: Mr. N. Fleming. 2 P.M., Surgical, Medical, and Children Clinics, Operations. 3 P.M., Gynæcological Clinic. 6.30 P.M., Venereal Department.

CENTRAL LONDON THROAT, NOSE AND EAR HOSPITAL, Gray's Inn-road, W.C.
FRIDAY, Feb. 12th.—4 P.M., Mr. Archer Ryland: Musculature of the Vocal Cords.

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, Leicester-square, W.C.
TUESDAY, Feb. 9th.—5 P.M., Dr. Graham Little: Lichen Planus.
THURSDAY.—5 P.M., Dr. A. C. Roxburgh: Scleroderma. Neurofibromatosis.

ROYAL DENTAL HOSPITAL OF LONDON SCHOOL OF DENTAL SURGERY.
WEDNESDAY, Feb. 10th.—5.30 P.M., Mr. C. B. Henry: Radiographic Appearances of Chronic Periodontal Infections.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C. 1.
POST-GRADUATE COURSE: FEBRUARY–MARCH, 1926.
CLINICAL LECTURES AND DEMONSTRATIONS.
MONDAY, Feb. 8th.—2 P.M., Out-patient Clinic: Dr. Hinds Howell. 3.30 P.M., Paraplegia: Dr. Risien Russell.
TUESDAY, Feb. 9th.—2 P.M., Out-patient Clinic: Dr. Walshe. 3.30 P.M., Disseminated Sclerosis, II.: Dr. Grainger Stewart.
THURSDAY, Feb. 11th.—2 P.M., Out-patient Clinic: Dr. Kinnier Wilson. 3.30 P.M., Some Effects of Spinal Injury: Dr. Gordon Holmes.
FRIDAY, Feb. 12th.—2 P.M., Out-patient Clinic: Dr. Adie. 3.30 P.M., Demonstration of Re-educative Exercises (in Exercise Room): Mr. Elmquist.
The fee for the Course, including Pathology lectures, is £5 5*s*. For those who hold Perpetual Tickets the fee is £3 3*s*.
COURSE OF LECTURES AND DEMONSTRATIONS ON THE PATHOLOGY OF THE NERVOUS SYSTEM.
MONDAY, Feb. 8th.—12 noon, Axon: Dr. J. G. Greenfield.
Dr. F. M. R. Walshe will give EIGHT LECTURES on THE ANATOMY AND PHYSIOLOGY OF THE NERVOUS SYSTEM at 12 noon on Thursdays if there are sufficient applicants. The Fee for this Course will be £2 2*s*.
Dr. H. J. Macbride will give a Course of EIGHT CLINICAL DEMONSTRATIONS, chiefly on METHODS OF EXAMINATION OF THE NERVOUS SYSTEM, in the Wards at 10 A.M. on Tuesdays and Fridays if sufficient entries are received. The fee for this Course will be £2 2*s*. (Commencing Feb. 16th.)
Mr. Armour and Mr. Sargent operate at the Hospital on Tuesday and Friday mornings at 9 A.M. or at such other times as may be announced.
Any part of the Course may be taken separately. Special arrangements will be made for those unable to take the whole Course.
Fees should be paid to the Secretary of the Hospital at the Office on entering for the Course.
J. G. GREENFIELD, Dean of Medical School.

UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL.
THURSDAY, Feb. 11th.—4.15 P.M., Dr. Charles Singer: The History of Gout and Diabetes (second of four lantern lectures, open to medical students of the University of London).

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.
WEDNESDAY, Feb. 10th.—Dr. Harrison: Chemical Tests in Acidosis.
THURSDAY.—4 P.M., Dr. Poynton: Upon the Early Diagnosis of Tuberculosis.

QUEEN CHARLOTTE'S MATERNITY HOSPITAL, Marylebone-road, N.W.
THURSDAY, Feb. 11th.—5 P.M., Mr. L. C. Phillips: Management of Contracted Pelvis.

UNIVERSITY OF SHEFFIELD POST-GRADUATE CLINIC.
TUESDAY, Feb. 9th.—3.30 P.M. (at the South Yorkshire Asylum), Dr. Vincent: Early Diagnosis of Mental Cases.
FRIDAY.—3.30 P.M. (at the Royal Infirmary), Mr. Cuff: Surgical Clinical Cases.

ST. MARY'S HOSPITALS, MANCHESTER, POST-GRADUATE LECTURE.
FRIDAY, Feb. 12th.—4.30 P.M. (at Whitworth-street West Branch), Dr. C. P. Lapage: Convulsions in Infancy and Childhood.

Appointments.

BIGLAND, A. D., M.D., Ch.B. Liverp., has been appointed Visiting Physician at the Browton Hill Infirmary, Liverpool.
GRIFFITHS, G. MARY, M.D., M.R.C.P. Lond., Assistant Medical Officer, Cheddleton Mental Hospital, Staffordshire.
GUY, J. B. S., M.B., B.S. Durh., Certifying Surgeon under the Factory and Workshop Acts for the Loftus District of the County of York.
St. Mary's Hospitals, Manchester: ADAM, R. S., M.B., Ch.B. Manch., MEACHIM, G. L., M.B., Ch.B. Manch., EDWARDS, N., F.R.C.S., STENHOUSE, G., M.B., Ch.B. Manch., and HUMBLE, E. GRETA, M.B., Ch.B., House Surgeons.

Vacancies.

For further information refer to the advertisement columns.

Ashton-under-Lyne, District Infirmary.—H.S. At rate of £150.
Barnsley, Beckett Hospital and Dispensary.—Jun. H.S. £140.
Bath, Eastern Dispensary.—Res. M.O. £175.
Birkenhead Borough Hospital.—Two H.S.'s. £200 and £150 respectively.
Birmingham General Hospital.—Part-time Clin. Asst. in Ven. Dept. £350.
Birmingham, Highbury Group of Hospitals.—Jun. Surg. O. £350.
Bolingbroke Hospital, Wandsworth Common, S.W.—Res. M.O. £200. Also H.S. At rate of £120.
Bradford City.—Asst. Bacteriologist. £600.
Bradford, Municipal General Hospital, St. Luke's.—H.P.'s and H.S.'s. Each at rate of £200.
Bristol Royal Infirmary.—Hon. S.
Carlisle, Cumberland Infirmary.—H.P. At rate of £155. Also Jun. H.S. At rate of £135.

Chesterfield and North Derbyshire Royal Hospital.—Fifth H.S. At rate of £100.
Dorset Mental Hospital, Herrison, near Dorchester.—Deputy Med. Supt. and Pathologist. £575.
East London Hospital for Children and Disp. for Women, Shadwell, E.—S. for Nose, Throat and Ear.
Hampstead General and North-West London Hospital, Haverstock-hill, N.W.—H.P. Also Cas. M.O. Each at rate of £100.
Holloway Sanatorium, Virginia Water, Surrey.—Med. Supt. £1600.
Hospital for Consumption and Dis. of Chest, Brompton, S.W.—Anæsthetist.
Hyde Borough.—M.O.H. £800-50-1000, plus travelling expenses.
Leeds City.—Chief Clin. Tuberculosis O. £1000.
Leeds Public Dispensary.—Sen. Res. M.O. £200.
Liverpool Open-Air Hospital for Children, Leasowe, Cheshire.—Res. Jun. M.O. £200.
London Lock Hospital, 91, Dean-street, W.—Surg. Reg. £100.
Manchester, Ancoats Hospital.—Res. M.O. Also H.S. At rate of £150 and £100 respectively. Also Anæsthetist. 10*s.* 6*d.* per attendance.
Manchester Royal Infirmary.—Hon. Asst. P. to Out-Patients.
Manchester, St. Mary's Hospitals.—Res. Obstet. O. and Res. Surg. O. Each £200.
Manor House Hospital, Golders Green, N.W.—H.S. £200.
Margate, Princess Mary's Hospital for Children.—Second Asst. M.O. £550.
Northampton County Mental Hospital, Berry Wood.—Sen. Asst. M.O. £500.
Northampton General Hospital.—Third H.S. At rate of £150. H.P. and H.S. Each at rate of £150.
Northern Hospital, Winchmore Hill, N.—Asst. M.O. for Encephalitis Lethargica Unit. £550.
Royal Free Hospital, Gray's Inn-road, W.C.—Second Asst. to Venereal Diseases Clinic.
Royal Northern Hospital, Holloway, N.—Cas. O. At rate of £90.
Royal Waterloo Hospital for Children and Women, Waterloo-road S.E.—Part-time Pathologist. £200.
St. Mary Abbots Hospital, Marloes-road, Kensington.—Asst. M.O. £326 17*s.*
St. Peter's Hospital for Stone, &c., Henrietta-street, Covent Garden, W.C.—H.S. At rate of £75.
Salford Royal Hospital.—Radiologist. £300. Also Hon. Gynæcologist and Hon. Asst. Gynæcologist.
Salford Union Infirmary, Hope, Pendleton, near Manchester.—Two Asst. Res. M.O.'s. £300 and £275 respectively.
Shrewsbury, Royal Salop Infirmary.—H.P. £160.
West Bromwich and District Hospital.—Res. H.S. £220.
West End Hospital for Nervous Diseases, Gloucester Gate, Regent's Park, N.W.—Sen. H.P. At rate of £150.
West London Hospital, Hammersmith, W.—Asst. Path. £250.
Western Skin Hospital, 44-46, Hampstead-road, N.W.—Hon. Radiologist.

The Home Secretary announces a vacancy for a Medical Referee under the Workmen's Compensation Act, 1906, for the Districts of the Bradford, Keighley, Settle, and Skipton County Courts (Circuit No. 12). Applications should reach the Private Secretary, Home Office, not later than Feb. 24th.

Births, Marriages, and Deaths.

BIRTHS.

LINDSAY.—On Jan. 22nd, at The Circus, Bath, the wife of James Lindsay, M.D., M.R.C.P., of a son.
MECREDY.—On Jan. 22nd, at Lower Baggot-street, Dublin, to Dr. and Mrs. Gerald Mecredy—a daughter.
PARRY.—On Jan. 25th, at King's-avenue, Muswell Hill, the wife of Reginald G. Wolfe Parry, L.D.S. Eng., of a son.
TOWNROW.—On Jan. 23rd, the wife of Vincent Townrow, F.R.C.S., Ivy Park-road, Sheffield, of a daughter.

MARRIAGES.

BAILEY—WIBLIN.—On Jan. 21st, at St. Peter's, Regent-square, W.C., Kenneth Norman Grierson Bailey, M.B., B.S. Lond., to Nellie, younger daughter of the late J. G. Wiblin and Mrs. Wiblin.
WALL—MCGREGOR.—On Dec. 10th, 1925, at St. John's Cathedral, Hong-Kong, by Rev. T. B. Powell, Margaret Alice, daughter of Charles Malcolm and Mrs. McGregor, of Plumstead, S.E., to Austin Darley Wall, M.B., F.R.C.S., of Shanghai, China.

DEATHS.

BROWNE.—On Jan. 29th, at Carlton-road, Weymouth, Dr. Thomas Browne, R.N., Inspector-General of Hospitals and Fleets, aged 84.
BURKE.—On Jan. 29th, Ulick, second son of Dr. and Mrs. E. T. Burke, of Manchester. Service took place at the Manchester Crematorium on Jan. 31st.
CHILDE.—On Jan. 29th, at Monte Carlo, of heart failure following pneumonia, Charles Plumley Childe, B.A. Camb., F.R.C.S. Eng., M.R.C.P. Edin., of Cranleigh, Kent-road, Southsea.
GERATY.—On Jan. 29th, at Waverley-street, Nottingham, Thomas Geraty, M.R.C.S., L.R.C.P., in his 74th year.
POPE.—On Jan. 31st, at Bournemouth, William Wippell Pope, C.M.G., Lieut.-Colonel late R.A.M.C., aged 68.
STEPHENS.—On Jan. 29th, in London, Augustus Edward Richard Stephens, Lieut.-Colonel (retd.), I.M.S.
WEBB.—On Jan. 29th, at Ballitore Cottage, Welwyn Garden City, Helen Webb, M.B. Lond.

*N.B.—A fee of 7*s.* 6*d.* is charged for the insertion of Notices of Births, Marriages, and Deaths.*

Notes, Comments, and Abstracts.

SELECTION OF COD-LIVER OILS FOR MEDICINAL USE.

BY E. POULSSON,
PROFESSOR OF PHARMACOLOGY, UNIVERSITY OF OSLO.

IN THE LANCET of Sept. 26th, 1925, Prof. J. C. Drummond compares Newfoundland and Norwegian cod-liver oils. He considers that oil from the former country usually has a high content of vitamins, and recommends it to the attention of British medical men. We must therein admit that Prof. Drummond is right. The present writer has, in the course of the past four or five years, examined a large number of Norwegian and also some Newfoundland oils, and has received the impression that they are equal as regards growth-promoting activity. A comparison was also made of their antirachitic effects. A large number of rats were placed upon a rickets-producing diet. One group of six animals served as a check. The other groups were given daily doses of from 2 to 8 mg. of Newfoundland or Norwegian cod-liver oil. The control animals exhibited typical symptoms of acute rickets (soft epiphyses, rosy, abnormally high content of water, abnormally low content of lime in the bones), whilst the animals which simultaneously with a rickets-producing diet were given doses of oil were not affected. In order to be on the safe side we give here the average figures from one series of experiments.

A further factor of practical importance is the variation with regard to the content of vitamins. In order to ascertain this we may either determine the lowest growth-producing (or antirachitic) dose. According to Drummond's and Zilva's investigations this lies for the majority of Newfoundland cod-liver oils between 1·3 and 1·6 mg. daily.[1] We can also demonstrate the variations by administring all the oils that are to be investigated in equal doses and then compare the increase in growth produced. In this manner were compared 12 samples of Newfoundland oil procured by the Norwegian Commercial Information Bureau, with 30 samples of ordinary Norwegian cod-liver oil bought openly at various chemists. Each animal was given a daily dose of 2 mg. Each sample of oil was tried upon a group consisting of four rats, and each test-period lasted for four weeks. The results will appear from the following table:—

Newfoundland Cod-Liver Oil.

G. = Growth per week in grammes.

No.	G.	No.	G.	No.	G.	No.	G.
1	3·0	4	7·3	7	7·7	10	3·5
2	4·1	5	4·5	8	8·2	11	2·0
3	7·5	6	0·5	9	8·0	12	11·6

Arithmetic mean: 5·6.

Norwegian Cod-Liver Oil.

1	6·0	9	5·0	17	2·8	25	6·4
2	6·3	10	5·0	18	3·5	26	4·5
3	4·5	11	6·8	19	3·5	27	8·0
4	5·5	12	5·5	20	7·5	28	6·3
5	4·5	13	7·3	21	6·0	29	12·4
6	3·8	14	7·0	22	7·6	30	4·4
7	4·3	15	3·8	23	4·0		
8	4·0	16	11·2	24	6·3		

Arithmetic mean: 5·8.

If we take the average figure for all the experiments, the result is that in the said dose the Norwegian oil caused an increase in growth of 5·8 g. weekly, and the Newfoundland oil an increase of 5·6 g. weekly—i.e., that with regard to growth-producing properties they are exactly equal, because in experiments of this kind the errors are greater than the difference found here. It also appears in a most distinct manner that they exhibit somewhat the same variations.

Mention may finally be made of the taste and smell of the oil, both factors of considerable practical importance. In order to be able to make any definite pronouncement on this point I should need a considerable number of samples of Newfoundland oil. Hitherto my impression has been that Norwegian oil is decidedly to be preferred in these respects. This may possibly be due to the circumstance that our most important fishery—viz., that of Lofoten—takes place in the months of February-April, when the average temperature is −2° to +2° C., and that the subsequent Finmark fishery takes place in April–June when the temperature is only a few degrees above 0, whilst the chief season

[1] S. S. Zilva and J. C. Drummond: Annual Report of the Department of Marine and Fisheries for the Year 1922, p. 19, St. John's, Newfoundland.

in Newfoundland is in the summer months with an average temperature in August of +15° C. As autolysis and decomposition commences extremely quickly in the liver, even in the course of a few hours, a low temperature is an advantage, although only as regards taste and smell, since the content of vitamins is scarcely affected thereby.

The result is, therefore, that oils from Newfoundland and from Norway are equal as regards content of vitamins and variability, and it is therefore quite natural that Prof. Drummond should direct the attention of his fellow countrymen to a product that originates in the British dominions.

To this recommendation, however, he attaches one or two remarks that are not correct and which strongly challenge contradiction. It is said that Finmark oil, like that of Newfoundland, is rich in vitamins, but that oil from Lofoten, our largest fishing district, is often relatively poor in vitamins, "Generally speaking they (the Finmark oils) are found to be from five to ten times more valuable than the average oils prepared in the Lofoten area although wide variations may occasionally be encountered," the reason apparently being that "when the fishes are practically starving during the spawning period, and at the same time are transferring much fat and vitamin to the reproductive cells, the livers yield an almost white oil of relatively low potency."

To this we may remark in the first place that the Lofoten oils have not the said low content of vitamins, and in the next that by the hypothesis just quoted, Prof. Drummond goes contrary to the results that a short time ago were described by him in conjunction with S. S. Zilva and M. Graham.[2] This will appear from the following:—

Lofoten Oils.

Since 1922—i.e., during the last four years—a large number of Norwegian cod-liver oils have been examined, and it has been found that as a general rule the Lofoten oil has a high content of vitamin. Of course, this oil, like those of Finmark and Newfoundland, is subject to exceptions. Particularly important investigations were made in 1925 with a view to obtaining a general survey of oils from all the various Norwegian fishery districts. For this purpose the Superintendent of Fisheries caused a large number of samples, 489 in all, to be collected. Of these average samples were taken to represent each of the more important zones with due regard to the size of the stocks. Thus, from a stock of 800 barrels the sample is twice as large as that from a stock of 400 barrels, and so on. In addition to the large sample from each zone a number were also taken at random in order to establish the extent of the variations. The large Lofoten sample was taken from 86 different factories with a total stock of 12,473 barrels, and should, therefore, reliably represent the average quality of the oil at the time the samples were taken. This was done during the period March 18th to April 18th—i.e., at the time when the fish were ready to spawn or had already spawned. The results of the investigations were that the average sample turned out to be very potent, for even in daily doses of only 1 mg. it promoted growth.

The increase in growth of all the eight rats that were given this dose will appear from the following table:—

38, 50, 60, 56, *56*, *55*, *62*, *73*, *80*, *79*	+ 23
38, 48, 55, 58, *60*, *56*, *62*, *68*, *70*, *70*	+ 10
46, 55, 66, 63, *61*, *71*, *78*, *84*, *82*, *88*	+ 27
45, 57, 65, 77, *73*, *77*, *72*, *74*, *84*, *89*	+ 16
41, 55, 66, 73, *71*, *77*, *85* (Abscess, killed)	+ 14
48, 63, 65, 66, *68*, *68*, *75*, *83*, *83*	+ 15
45, 58, 65, *63*, *66*, *71*, *77*, *77*	+ 14
40, 52, 58, 62, *63*, *76*, *83*, *87*, *87*	+ 24

The figures give the weekly weights of the animals, those italicised belonging to the test-period (1 mg. of oil daily), the others to the preparatory period (diet without vitamin A).

Relation of the Vitamin Potency of the Liver Oils to the Sexual Condition of the Cod.

In the sexually mature cod which is ready to spawn the liver is very large and yellow in colour—i.e., full of oil, but during the spawning season the liver shrinks and assumes a reddish hue—i.e., the oil is depleted. It is probable that the fats in the liver have a double action. The cod has a long distance to travel from the open sea to the spawning grounds along the coast. In this comparatively restricted area there is by no means sufficient food for the huge numbers of fish, so that the spawning season is largely a period of fasting. It may be assumed that the stored up liver oil partly goes to sustain the fish and partly to the sexual organs which in the spawning season—i.e., at the very time when nourishment is scarce—increase greatly in size. It might be thought that both vitamins and fats would thus be used up in the same proportion, or that the vitamins would be principally absorbed by the sexual organs. In the latter instance the oil produced from cod which had spawned would be poor in vitamins and of little medicinal value. It has been shown, however, that such is not the case. After numerous investigations I have found no important or constant difference.

To my surprise I discovered a very valuable confirmation of my results in a paper published by Zilva, Drummond, and Graham in 1924, which states: "This passage of the vitamin to the genitals might either have had no influence on the vitamin concentration of the residual oil of the liver in spite of the diminution of the oil content of the organ, or it might have removed more of the vitamin in proportion to the oil. In the former case the potency of the oil during the various stages of the reproductive cycle would not be affected appreciably, in the latter case the livers would yield oils with a diminished vitamin content during the spawning period." The question is therefore very clear, and the authors are in no doubt as to the answer. Fish from Flamborough and Scarborough were the first to be investigated.

The oil was produced by the authors themselves in the usual way. The result was: "Little variation in the potency of the oils could be recorded. Even the liver oils from spent cod in March fish, which must have spawned just before being caught and which had no time to recuperate, did not deviate in potency from the oils of fish before spawning and several months after spawning and consequently after recuperation. It is, therefore, evident that, as the spawning period approaches, the oil and the vitamin from the liver both pass into the gonads. The relative potency of the residual liver oils is, however, not affected. Further confirmation of this observation that the fluctuation in potency of liver oil is not controlled by the condition of the fish in the reproductive cycle was obtained by examining liver oils from various fish caught in the North Sea and in the vicinity of the British Isles at different times of the year—viz., September, 1921 and 1922, November and December, 1921, January, February, April, May, June, July, August, 1922. During this period no serious fluctuation could be observed in spite of the number of samples (about 40 in all) that were examined." The paper concludes with the following summary: "The sexual condition and age of the cod do not influence the vitamin A potency of the liver oil."

It seems to me that Prof. Drummond's statements in THE LANCET in 1925 scarcely correspond with the results of his own investigations in 1924.

[2] S. S. Zilva, J. C. Drummond, M. Graham: The Biochemical Journal, 1924, xviii., 178.

COLONIAL HEALTH REPORTS.

Sierra Leone.

THE territory comprising the colony and protectorate is about the size of Ireland (27,250 square miles). The colony proper as at present constituted comprises the Sierra Leone Peninsula, Sherbro Island, Turner's Peninsula, and a number of small islands, of which the most important is York Island, adjacent to Sherbro, as it is a port of call for sea-going steamers. Freetown, the capital, is situated on the north-east corner of the peninsula on a fine natural harbour formed by the mouth of the Rokelle or Sierra Leone River. The town enjoys a splendid pipe-borne water-supply, the catchment area being situated in the mountains where there are large reservations of land. This and other equally important sanitary improvements have done much towards dispelling the evil reputation from which the city has long suffered. The population of Freetown at the census of 1921 was 44,142. The population of the protectorate, according to the same census, was 1,456,148, composed of various tribes, of which the Mendes and Temnes are the most numerous. The number of European residents during 1924 in the colony and protectorate was 198 officials, 486 military, and 420 non-officials (including white Americans). There was a marked reduction in the incidence of dysentery in Freetown, only 42 cases beng reported as against 138 in 1923. Tuberculosis appears to be increasing. Two cases of small-pox were reported in Freetown and there were ten cases in the protectorate. Chicken-pox was fairly frequent both in the colony and in the protectorate; there were no cases of diphtheria, influenza, or cerebro-spinal meningitis. The sanitary department purchased and destroyed 12,708 rats, paying for them at the rate of 1*d.* each. The climate of Sierra Leone is tropical with a heavy rainfall and high atmospheric humidity during the greater part of the year. The shade temperature rarely falls below 70° F. On the other hand it rarely rises above 90° even in the dry season, and there is always a sufficient daily range of temperature to render the mornings and evenings relatively cool. It is not always damp; speaking generally, there are four months of very dry weather, when little or no rain falls, and four months of varying conditions with a moderate rainfall for a tropical country. The single rainy season lasts roughly from May to the end of October, the heaviest rainfalls occurring in July, August, and September. Records of the past 40 years show a marked decrease in the rainfall, and this is said to be common to the whole of West Africa and

the neighbouring islands. As to the conditions of living in Sierra Leone, it is remarked that there are facilities for playing cricket, football, tennis, and golf. As the country is hilly, cycling is laborious and horses do not thrive, but for some distance out from the town the roads are good enough for motor-cars and motor-cycles to be used. Local meat is by no means so good as English meat, but when properly cooked is quite nutritious. Excellent fresh fish can be bought, and, apart from potatoes and onions, which are imported, fresh vegetables and fresh fruit can be obtained at reasonable prices throughout the year. A cold storage plant, from which fresh meat and fish, game, &c., can be procured, has been started by one of the European firms in Freetown.

Jamaica.

Mr. Charles W. Doorly, acting Colonial Secretary, is the author of a report on the affairs of the colony for the year 1924, from which it appears that the estimated population is 904,405. The number of marriages during the period under review was 3118. The births registered were 33,132, being at the rate of 36·8 per 1000, as against 38·2 in 1923. The number of deaths registered was 19,592, the death-rate being 21·7 per 1000, as compared with 22·7 in 1923. During 1924, 35·5 per cent. of the total deaths were those of children under 2 years of age, and of these 27·3 per cent. were those of children under 1 year of age. The principal causes of death per 100 of total deaths amongst the inhabitants of Kingston, the capital, were: Diarrhœa and enteritis, 10·3; atrophy, icterus, and scleroma of the newborn, 11·6; phthisis, 10·7; enteric fever, 5·8; pneumonia, 5·8; heart disease, 6·7; chronic Bright's disease, 4·1; cerebral hæmorrhage, apoplexy, 3·1. During the month of July an International Conference on Health Problems in Tropical Countries was held at Kingston under the auspices of the medical department of the United Fruit Company. The Conference was under the presidency of Dr. W. F. Deeks, the general manager of the company's medical department, and was attended by many prominent men of the medical profession from all parts of the world, including Sir Leonard Rogers, Sir Thomas Oliver, Sir Arbuthnot Lane, Dr. A. Castellani, and Dr. F. G. Banting, the discoverer of insulin, and interesting papers were read at the meetings. Increased interest was taken during the year in public health generally throughout the colony. Full-time medical officers of health were appointed for two parishes. The International Health Board (Rockefeller Foundation) pursued their campaign of hookworm eradication. Alastrim continued to exist in the island, but the incidence of the disease decreased during the year to such an extent that the number of cases reported in the last quarter was the smallest since the outbreak started. The advent of rains in the latter part of the year caused local epidemics of malaria. The mean island rainfall of the four divisions of Jamaica for the year 1924 was 79·28 inches, or about 4 per cent. above the 50-year average of 76·46 inches. The rainfall for Kingston was 39·19 inches, and the average 33·59 inches. At Kingston the mean temperature for the 12 months was 79·1° F. Hail fell at Kempshot on July 14th during a thunderstorm; also at Santa Cruz on July 30th, accompanied by rain and high wind. A few very slight shocks of earthquake were felt at several places in the island in the months of March, June, July, August, September, October, and November.

SHANTUNG CHRISTIAN UNIVERSITY, TSINAN.

To the Editor of THE LANCET.

SIR,—The University Hospital of the Shantung Christian University, Tsinan, North China, is in need of a radiologist, and the board of governors would be very glad indeed to receive an offer of service from a young specialist in this department of medicine, who would be prepared to go out upon a missionary footing. An excellent equipment has been got together, provided largely by the Wesleyan Methodist Missionary Society, one of the coöperating bodies in the University, and that Society is prepared to support the desired worker.

Particulars respecting terms of service will gladly be given by either of the undersigned, and to those looking out for a medical missionary career, who may have had special training in radiology, this opening should present features of attractive interest. We may add that the University is carried on by 15 British and American societies, and is one of the biggest coöperative educational efforts to be found upon the mission field.

We are, Sir, yours faithfully,

R. FLETCHER MOORSHEAD,
Hon. Sec., Shantung Christian University.
F. PERCY WIGFIELD,
Medical Secretary, Wesleyan Methodist Missionary Society.
J. STANLEY ELLIS,
Ex-Radiologist of the University.

Furnival-street, London, E.C., Jan. 30th, 1926.

CLEAN BREAD.

To the Editor of THE LANCET.

SIR,—One gets tired of hearing so much about clean meat and clean milk—both of them unattainable. The meat, however, is always cooked and so, very frequently, is the milk; it should be always. There is a much more crying evil in the dirty delivery of bread. I have often seen a bicycle fall over and the bread scattered in the gutter. The boy picks it up and polishes it on his dirty sleeve. I have seen worse things in which a dog plays an important part while the boy plays marbles. Men who ought to know better wipe their horse's nose, or feed him with sugar, or mess about with their motor engine and then deliver bread with their filthy hands. The bakers refuse to supply in paper bags because of the cost, not of paper, but of labour. Do please start a crusade against this evil. I fear the local bakers might refuse to supply me with bread if I signed my name and so, in place of it I subscribe this—

Jan. 23rd, 1926. PANIS.

*** We have repeatedly advocated the clean handling of bread. As long ago as 1913 M. Herriot, then Mayor of Lyons, issued a decree that loaves delivered other than in a closed vehicle must be completely wrapped in an impermeable covering.—ED. L.

THE NORTH-WESTERN NATURALIST.

MEDICAL men have always been active in promoting natural history studies, and their medical implications appeal to those who feel that it may be useful as well as agreeable to hunt for mosquitoes or snails and know all about them. Some of our readers therefore will probably be interested to know that an attempt is being made to start a new natural history journal, the *North-Western Naturalist*, to replace the *Lancashire and Cheshire Naturalist* which unfortunately came to an end last year. Mr. A. A. Dallman (17, Mount-road, Higher Tranmere, Birkenhead), who is known to many medical botanists, will be glad to hear from anyone interested, and especially from those who are prepared to subscribe to the new paper or help to support it through its infancy by some guarantee.

THE ABDOMINAL MUSCLES.

Mr. F. A. Hornibrook has already published a book on the Culture of the Abdomen, in which he described his system of exercises for the abdominal muscles, and he has now gone further in a second book (Physical Fitness in Middle Life, Cassell, 6*s*.) by taking up some of the conditions in which these exercises are indicated. It is the middle-aged man who particularly comes in for attention, and it is his overloaded colon, "the White Man's Burden," which gets most of the blame for the physical unfitness so common among this class, especially in our cities. Intestinal toxæmia has attracted many lay disciples. Mr. Hornibrook is guarded in his enthusiasm, and although the idea of practising the contraction of the abdominal muscles while walking to work sounds disconcerting, the general teaching does not lack common sense. The plea for a more rational posture while defæcating is worthy of support. The postscript on the value of wholemeal bread is not convincing, nor is it in keeping with the non-controversial nature of the rest of the book.

VINOLIA MEDICATED SOAPS.

WE have received from the Vinolia Company, Limited, Lever House, Blackfriars, London, E.C., specimens of their medicated soaps which they commend by reason of the fact that they are made from carefully selected ingredients and are the outcome of experience in a large research laboratory, while chemical tests are made at each stage of manufacture. Baby Soap, in which a special base is employed, and to which petrolatum is added before milling, produces an even, soft, and soothing lather, while the Carbolic Health Soap and the Coal Tar Soap, the latter of which contains cresylic compounds with lanolin, are pleasant to use. The Medicated Cream Soap, with which is incorporated boric acid, calamine, zinc oxide, and lanolin, will be found useful in suitable cases, as will also the Sulphur Skin Soap with its colloidal sulphur content. Samples of these soaps will be sent for trial by medical men who apply for them to the manufacturers. We are informed that the works of the Vinolia Company are always open for inspection by members of the medical profession.

AT the annual meeting of the Keswick Cottage Hospital it was stated that there were only about 20 subscribers out of a population of about 5000.

Dr. Cyril Hartley Durrant, chief medical officer, has been appointed a member of the Executive Council of the Presidency of Saint Christopher and Nevis for a further period.